

# SEQUENCE LISTING

<110> The Procter & Gamble Company  
Isfort, Robert  
Sheldon, Russell

<120> Methods for Identifying Compounds for Regulating Muscle Mass or  
Function Using Corticotropin Releasing Factor Receptors

<130> 8448R

<140> Not Yet Assigned

<141> 2003-08-27

<150> US 09/799,978

<151> 2001-03-06

<160> 44

<170> PatentIn version 3.0

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Asp Leu Ile Gly Thr Cys Trp Pro Arg Ser Pro Ala Gly Gln Leu Val  
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Lys Val His Tyr His Val Ala Val Ile Ile Asn Tyr Leu Gly His Cys  
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 Lys Cys Trp Phe Gly Lys Arg Pro Gly Val Tyr Thr Asp Tyr Ile Tyr  
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Gln Glu Ile Leu Asn Glu Glu Lys Lys Ser Lys Val His Tyr His Val  
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Asn Ile Val Arg Ile Leu Met Thr Lys Leu Arg Ala Ser Thr Thr Ser  
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Pro Leu Leu Gly Ile Thr Tyr Met Leu Phe Phe Val Asn Pro Gly Glu  
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Asp Glu Val Ser Arg Val Val Phe Ile Tyr Phe Asn Ser Phe Leu Glu  
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Ser Phe Gln Gly Phe Phe Val Ser Val Phe Tyr Cys Phe Leu Asn Ser  
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Glu Val Arg Ser Ala Ile Arg Lys Arg Trp His Arg Trp Gln Asp Lys  
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Tyr	Leu	His	Thr	Ala	Ile	Val	Leu	Thr	Tyr	Ser	Thr	Asp	Arg	Leu	Arg		
			175					180					185				
aaa	tgg	atg	ttc	atc	tgc	att	ggc	tgg	ggc	gtg	ccc	ttc	ccc	atc	att	627	
Lys	Trp	Met	Phe	Ile	Cys	Ile	Gly	Trp	Gly	Val	Pro	Phe	Pro	Ile	Ile		
		190					195					200					
gtg	gcc	tgg	gcc	att	ggg	aag	ctg	tac	tac	gac	aac	gag	aag	tgc	tgg	675	
Val	Ala	Trp	Ala	Ile	Gly	Lys	Leu	Tyr	Tyr	Asp	Asn	Glu	Lys	Cys	Trp		
	205					210					215						
ttt	ggc	aaa	agg	cct	ggg	gtg	tac	acc	gac	tac	atc	tac	cag	ggc	ccc	723	
Phe	Gly	Lys	Arg	Pro	Gly	Val	Tyr	Thr	Asp	Tyr	Ile	Tyr	Gln	Gly	Pro		
220					225					230					235		
atg	atc	ctg	gtc	ctg	ctg	atc	aac	ttc	atc	ttc	ctt	ttc	aac	atc	gtc	771	
Met	Ile	Leu	Val	Leu	Leu	Ile	Asn	Phe	Ile	Phe	Leu	Phe	Asn	Ile	Val		
				240					245					250			
cgc	atc	ctc	atg	acc	aag	ctc	cgg	gca	tcc	acc	acg	tct	gag	acc	att	819	
Arg	Ile	Leu	Met	Thr	Lys	Leu	Arg	Ala	Ser	Thr	Thr	Ser	Glu	Thr	Ile		
			255					260					265				
cag	tac	agg	aag	gct	gtg	aaa	gcc	act	ctg	gtg	ctg	ctg	ccc	ctc	ctg	867	
Gln	Tyr	Arg	Lys	Ala	Val	Lys	Ala	Thr	Leu	Val	Leu	Leu	Pro	Leu	Leu		
		270					275					280					
ggc	atc	acc	tac	atg	ctg	ttc	ttc	gtc	aac	ccc	ggg	gag	gat	gag	gtc	915	
Gly	Ile	Thr	Tyr	Met	Leu	Phe	Phe	Val	Asn	Pro	Gly	Glu	Asp	Glu	Val		

285	290	295	
tcc cgg gtc gtc ttc atc tac ttc aac tcc ttc ctg gaa tcc ttc cag			963
Ser Arg Val Val Phe Ile Tyr Phe Asn Ser Phe Leu Glu Ser Phe Gln			
300	305	310	315
ggc ttc ttt gtg tct gtg ttc tac tgt ttc ctc aat agt gag gtc cgt			1011
Gly Phe Phe Val Ser Val Phe Tyr Cys Phe Leu Asn Ser Glu Val Arg			
	320	325	330
tct gcc atc cgg aag agg tgg cac cgg tgg cag gac aag cac tcg atc			1059
Ser Ala Ile Arg Lys Arg Trp His Arg Trp Gln Asp Lys His Ser Ile			
	335	340	345
cgt gcc cga gtg gcc cgt gcc atg tcc atc ccc acc tcc cca acc cgt			1107
Arg Ala Arg Val Ala Arg Ala Met Ser Ile Pro Thr Ser Pro Thr Arg			
	350	355	360
gtc agc ttt cac agc atc aag cag tcc aca gca gtc tga			1146
Val Ser Phe His Ser Ile Lys Gln Ser Thr Ala Val			
	365	370	375
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Gly Leu Asn Pro Val Ser Ala Ser Leu Gln Asp Gln His Cys Glu Ser			
	20	25	30
Leu Ser Leu Ala Ser Asn Ile Ser Asp Asn Gly Tyr Arg Glu Cys Leu			
	35	40	45
Ala Asn Gly Ser Trp Ala Ala Arg Val Asn Tyr Ser Glu Cys Gln Glu			
	50	55	60
Ile Leu Asn Glu Glu Lys Lys Ser Lys Val His Tyr His Val Ala Val			
65	70	75	80
Ile Ile Asn Tyr Leu Gly His Cys Ile Ser Leu Val Ala Leu Leu Val			
	85	90	95
Ala Phe Val Leu Phe Leu Arg Leu Arg Ser Ile Arg Cys Leu Arg Asn			
	100	105	110
Ile Ile His Trp Asn Leu Ile Ser Ala Phe Ile Leu Arg Asn Ala Thr			
	115	120	125

Trp	Phe	Val	Val	Gln	Leu	Thr	Met	Ser	Pro	Glu	Val	His	Gln	Ser	Asn	
130						135					140					
Val	Gly	Trp	Cys	Arg	Leu	Val	Thr	Ala	Ala	Tyr	Asn	Tyr	Phe	His	Val	
145					150					155					160	
Thr	Asn	Phe	Phe	Trp	Met	Phe	Gly	Glu	Gly	Cys	Tyr	Leu	His	Thr	Ala	
				165					170					175		
Ile	Val	Leu	Thr	Tyr	Ser	Thr	Asp	Arg	Leu	Arg	Lys	Trp	Met	Phe	Ile	
			180					185					190			
Cys	Ile	Gly	Trp	Gly	Val	Pro	Phe	Pro	Ile	Ile	Val	Ala	Trp	Ala	Ile	
		195					200					205				
Gly	Lys	Leu	Tyr	Tyr	Asp	Asn	Glu	Lys	Cys	Trp	Phe	Gly	Lys	Arg	Pro	
	210					215					220					
Gly	Val	Tyr	Thr	Asp	Tyr	Ile	Tyr	Gln	Gly	Pro	Met	Ile	Leu	Val	Leu	
225					230					235					240	
Leu	Ile	Asn	Phe	Ile	Phe	Leu	Phe	Asn	Ile	Val	Arg	Ile	Leu	Met	Thr	
				245					250					255		
Lys	Leu	Arg	Ala	Ser	Thr	Thr	Ser	Glu	Thr	Ile	Gln	Tyr	Arg	Lys	Ala	
			260					265					270			
Val	Lys	Ala	Thr	Leu	Val	Leu	Leu	Pro	Leu	Leu	Gly	Ile	Thr	Tyr	Met	
		275					280					285				
Leu	Phe	Phe	Val	Asn	Pro	Gly	Glu	Asp	Glu	Val	Ser	Arg	Val	Val	Phe	
	290					295					300					
Ile	Tyr	Phe	Asn	Ser	Phe	Leu	Glu	Ser	Phe	Gln	Gly	Phe	Phe	Val	Ser	
305					310					315					320	
Val	Phe	Tyr	Cys	Phe	Leu	Asn	Ser	Glu	Val	Arg	Ser	Ala	Ile	Arg	Lys	
				325					330					335		
Arg	Trp	His	Arg	Trp	Gln	Asp	Lys	His	Ser	Ile	Arg	Ala	Arg	Val	Ala	
			340					345					350			
Arg	Ala	Met	Ser	Ile	Pro	Thr	Ser	Pro	Thr	Arg	Val	Ser	Phe	His	Ser	
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Ile Lys Gln Ser Thr Ala Val  
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 1 5 10 15  
 ggg ctg aac ccc gtc tct gcc tcc ctc cag gac cag cac tgc gag agc 96  
 Gly Leu Asn Pro Val Ser Ala Ser Leu Gln Asp Gln His Cys Glu Ser  
 20 25 30  
 ctg tcc ctg gcc agc aac atc tca gga ctg cag tgc aac gca tcc gtg 144  
 Leu Ser Leu Ala Ser Asn Ile Ser Gly Leu Gln Cys Asn Ala Ser Val  
 35 40 45  
 gac ctc att ggc acc tgc tgg ccc cgc agc cct gcg ggg cag cta gtg 192  
 Asp Leu Ile Gly Thr Cys Trp Pro Arg Ser Pro Ala Gly Gln Leu Val  
 50 55 60  
 gtt cgg ccc tgc cct gcc ttt ttc tat ggt gtc cgc tac aat acc aca 240  
 Val Arg Pro Cys Pro Ala Phe Phe Tyr Gly Val Arg Tyr Asn Thr Thr  
 65 70 75 80  
 aac aat ggc tac cgg gag tgc ctg gcc aat ggc agc tgg gcc gcc cgc 288  
 Asn Asn Gly Tyr Arg Glu Cys Leu Ala Asn Gly Ser Trp Ala Ala Arg  
 85 90 95  
 gtg aat tac tcc gag tgc cag gag atc ctc aat gag gag aaa aaa agc 336  
 Val Asn Tyr Ser Glu Cys Gln Glu Ile Leu Asn Glu Glu Lys Lys Ser  
 100 105 110  
 aag gtg cac tac cat gtc gca gtc atc atc aac tac ctg ggc cac tgt 384  
 Lys Val His Tyr His Val Ala Val Ile Ile Asn Tyr Leu Gly His Cys  
 115 120 125  
 atc tcc ctg gtg gcc ctc ctg gtg gcc ttt gtc ctc ttt ctg cgg ctc 432  
 Ile Ser Leu Val Ala Leu Leu Val Ala Phe Val Leu Phe Leu Arg Leu  
 130 135 140  
 agg agc atc cgg tgc ctg cga aac atc atc cac tgg aac ctc atc tcc 480  
 Arg Ser Ile Arg Cys Leu Arg Asn Ile Ile His Trp Asn Leu Ile Ser  
 145 150 155 160  
 gcc ttc atc ctg cgc aac gcc acc tgg ttc gtg gtc cag cta acc atg 528  
 Ala Phe Ile Leu Arg Asn Ala Thr Trp Phe Val Val Gln Leu Thr Met  
 165 170 175  
 agc ccc gag gtc cac cag agc aac gtg ggc tgg tgc agg ttg gtg aca 576  
 Ser Pro Glu Val His Gln Ser Asn Val Gly Trp Cys Arg Leu Val Thr  
 180 185 190

gcc gcc tac aac tac ttc cat gtg acc aac ttc ttc tgg atg ttc ggc Ala Ala Tyr Asn Tyr Phe His Val Thr Asn Phe Phe Trp Met Phe Gly 195 200 205	624
gag ggc tgc tac ctg cac aca gcc atc gtg ctc acc tac tcc act gac Glu Gly Cys Tyr Leu His Thr Ala Ile Val Leu Thr Tyr Ser Thr Asp 210 215 220	672
cgg ctg cgc aaa tgg atg ttc atc tgc att ggc tgg ggt gtg ccc ttc Arg Leu Arg Lys Trp Met Phe Ile Cys Ile Gly Trp Gly Val Pro Phe 225 230 235 240	720
ccc atc att gtg gcc tgg gcc att ggg aag ctg tac tac gac aat gag Pro Ile Ile Val Ala Trp Ala Ile Gly Lys Leu Tyr Tyr Asp Asn Glu 245 250 255	768
aag tgc tgg ttt ggc aaa agg cct ggg gtg tac acc gac tac atc tac Lys Cys Trp Phe Gly Lys Arg Pro Gly Val Tyr Thr Asp Tyr Ile Tyr 260 265 270	816
cag ggc ccc atg atc ctg gtc ctg ctg atc aat ttc atc ttc ctt ttc Gln Gly Pro Met Ile Leu Val Leu Leu Ile Asn Phe Ile Phe Leu Phe 275 280 285	864
aac atc gtc cgc atc ctc atg acc aag ctc cgg gca tcc acc acg tct Asn Ile Val Arg Ile Leu Met Thr Lys Leu Arg Ala Ser Thr Thr Ser 290 295 300	912
gag acc att cag tac agg aag gct gtg aaa gcc act ctg gtg ctg ctg Glu Thr Ile Gln Tyr Arg Lys Ala Val Lys Ala Thr Leu Val Leu Leu 305 310 315 320	960
ccc ctc ctg ggc atc acc tac atg ctg ttc ttc gtc aat ccc ggg gag Pro Leu Leu Gly Ile Thr Tyr Met Leu Phe Phe Val Asn Pro Gly Glu 325 330 335	1008
gat gag gtc tcc cgg gtc gtc ttc atc tac ttc aac tcc ttc ctg gaa Asp Glu Val Ser Arg Val Val Phe Ile Tyr Phe Asn Ser Phe Leu Glu 340 345 350	1056
tcc ttc cag gtc cgt tct gcc atc cgg aag agg tgg cac cgg tgg cag Ser Phe Gln Val Arg Ser Ala Ile Arg Lys Arg Trp His Arg Trp Gln 355 360 365	1104
gac aag cac tcg atc cgt gcc cga gtg gcc cgt gcc atg tcc atc ccc Asp Lys His Ser Ile Arg Ala Arg Val Ala Arg Ala Met Ser Ile Pro 370 375 380	1152
acc tcc cca acc cgt gtc agc ttt cac agc atc aag cag tcc aca gca Thr Ser Pro Thr Arg Val Ser Phe His Ser Ile Lys Gln Ser Thr Ala 385 390 395 400	1200
gtc tga Val	1206

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<213> Homo sapiens

<400> 8

Met Gly Gly His Pro Gln Leu Arg Leu Val Lys Ala Leu Leu Leu Leu  
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Gly Leu Asn Pro Val Ser Ala Ser Leu Gln Asp Gln His Cys Glu Ser  
20 25 30

Leu Ser Leu Ala Ser Asn Ile Ser Gly Leu Gln Cys Asn Ala Ser Val  
35 40 45

Asp Leu Ile Gly Thr Cys Trp Pro Arg Ser Pro Ala Gly Gln Leu Val  
50 55 60

Val Arg Pro Cys Pro Ala Phe Phe Tyr Gly Val Arg Tyr Asn Thr Thr  
65 70 75 80

Asn Asn Gly Tyr Arg Glu Cys Leu Ala Asn Gly Ser Trp Ala Ala Arg  
85 90 95

Val Asn Tyr Ser Glu Cys Gln Glu Ile Leu Asn Glu Glu Lys Lys Ser  
100 105 110

Lys Val His Tyr His Val Ala Val Ile Ile Asn Tyr Leu Gly His Cys  
115 120 125

Ile Ser Leu Val Ala Leu Leu Val Ala Phe Val Leu Phe Leu Arg Leu  
130 135 140

Arg Ser Ile Arg Cys Leu Arg Asn Ile Ile His Trp Asn Leu Ile Ser  
145 150 155 160

Ala Phe Ile Leu Arg Asn Ala Thr Trp Phe Val Val Gln Leu Thr Met  
165 170 175

Ser Pro Glu Val His Gln Ser Asn Val Gly Trp Cys Arg Leu Val Thr  
180 185 190

Ala Ala Tyr Asn Tyr Phe His Val Thr Asn Phe Phe Trp Met Phe Gly  
195 200 205

Glu Gly Cys Tyr Leu His Thr Ala Ile Val Leu Thr Tyr Ser Thr Asp  
210 215 220

Arg Leu Arg Lys Trp Met Phe Ile Cys Ile Gly Trp Gly Val Pro Phe



gcg ctg gct gaa gag ctg ctc ttg gac ggc tgg ggg cca ccc ctg gac Ala Leu Ala Glu Glu Leu Leu Leu Asp Gly Trp Gly Pro Pro Leu Asp 20 25 30	96
ccc gag ggt ccc tac tcc tac tgc aac acg acc ttg gac cag atc gga Pro Glu Gly Pro Tyr Ser Tyr Cys Asn Thr Thr Leu Asp Gln Ile Gly 35 40 45	144
acg tgc tgg ccc cgc agc gct gcc gga gcc ctc gtg gag agg ccg tgc Thr Cys Trp Pro Arg Ser Ala Ala Gly Ala Leu Val Glu Arg Pro Cys 50 55 60	192
ccc gag tac ttc aac ggc gtc aag tac aac acg acc cgg aat gcc tat Pro Glu Tyr Phe Asn Gly Val Lys Tyr Asn Thr Thr Arg Asn Ala Tyr 65 70 75 80	240
cga gaa tgc ttg gag aat ggg acg tgg gcc tca aag atc aac tac tca Arg Glu Cys Leu Glu Asn Gly Thr Trp Ala Ser Lys Ile Asn Tyr Ser 85 90 95	288
cag tgt gag ccc att ttg gat gac aag cag agg aag tat gac ctg cac Gln Cys Glu Pro Ile Leu Asp Asp Lys Gln Arg Lys Tyr Asp Leu His 100 105 110	336
tac cgc atc gcc ctt gtc gtc aac tac ctg ggc cac tgc gta tct gtg Tyr Arg Ile Ala Leu Val Val Asn Tyr Leu Gly His Cys Val Ser Val 115 120 125	384
gca gcc ctg gtg gcc gcc ttc ctg ctt ttc ctg gcc ctg cgg agc att Ala Ala Leu Val Ala Ala Phe Leu Leu Phe Leu Ala Leu Arg Ser Ile 130 135 140	432
cgc tgt ctg cgg aat gtg att cac tgg aac ctc atc acc acc ttt atc Arg Cys Leu Arg Asn Val Ile His Trp Asn Leu Ile Thr Thr Phe Ile 145 150 155 160	480
ctg cga aat gtc atg tgg ttc ctg ctg cag ctc gtt gac cat gaa gtg Leu Arg Asn Val Met Trp Phe Leu Leu Gln Leu Val Asp His Glu Val 165 170 175	528
cac gag agc aat gag gtc tgg tgc cac tgc atc acc acc atc ttc aac His Glu Ser Asn Glu Val Trp Cys His Cys Ile Thr Thr Ile Phe Asn 180 185 190	576
tac ttc gtg gtg acc aac ttc ttc tgg atg ttt gtg gaa ggc tgc tac Tyr Phe Val Val Thr Asn Phe Phe Trp Met Phe Val Glu Gly Cys Tyr 195 200 205	624
ctg cac acg gcc att gtc atg acc tac tcc act gag cgc ctg cgc aag Leu His Thr Ala Ile Val Met Thr Tyr Ser Thr Glu Arg Leu Arg Lys 210 215 220	672
tgc ctc ttc ctc ttc atc gga tgg tgc atc ccc ttc ccc atc atc gtc Cys Leu Phe Leu Phe Ile Gly Trp Cys Ile Pro Phe Pro Ile Ile Val 225 230 235 240	720
gcc tgg gcc atc ggc aag ctc tac tat gag aat gaa cag tgc tgg ttt Ala Trp Ala Ile Gly Lys Leu Tyr Tyr Glu Asn Glu Gln Cys Trp Phe 245 250 255	768
ggc aag gag cct ggc gac ctg gtg gac tac atc tac caa ggc ccc atc	816

Gly	Lys	Glu	Pro	Gly	Asp	Leu	Val	Asp	Tyr	Ile	Tyr	Gln	Gly	Pro	Ile		
			260					265					270				
att	ctc	gtg	ctc	ctg	atc	aat	ttc	gta	ttt	ctg	ttc	aac	atc	gtc	agg	864	
Ile	Leu	Val	Leu	Leu	Ile	Asn	Phe	Val	Phe	Leu	Phe	Asn	Ile	Val	Arg		
		275					280					285					
atc	cta	atg	aca	aag	tta	cgc	gcg	tcc	acc	aca	tcc	gag	aca	atc	cag	912	
Ile	Leu	Met	Thr	Lys	Leu	Arg	Ala	Ser	Thr	Thr	Ser	Glu	Thr	Ile	Gln		
		290				295					300						
tac	agg	aag	gca	gtg	aag	gcc	acc	ctg	gtg	ctc	ctg	ccc	ctc	ctg	ggc	960	
Tyr	Arg	Lys	Ala	Val	Lys	Ala	Thr	Leu	Val	Leu	Leu	Pro	Leu	Leu	Gly		
305					310					315					320		
atc	acc	tac	atg	ctc	ttc	ttc	gtc	aat	ccc	ggg	gag	gac	gac	ctg	tca	1008	
Ile	Thr	Tyr	Met	Leu	Phe	Phe	Val	Asn	Pro	Gly	Glu	Asp	Asp	Leu	Ser		
				325				330						335			
cag	atc	atg	ttc	atc	tat	ttc	aac	tcc	ttc	ctg	cag	tcg	ttc	cag	ggt	1056	
Gln	Ile	Met	Phe	Ile	Tyr	Phe	Asn	Ser	Phe	Leu	Gln	Ser	Phe	Gln	Gly		
			340					345					350				
ttc	ttc	gtg	tct	gtc	ttc	tac	tgc	ttc	ttc	aat	gga	gag	gtg	cgc	tca	1104	
Phe	Phe	Val	Ser	Val	Phe	Tyr	Cys	Phe	Phe	Asn	Gly	Glu	Val	Arg	Ser		
		355					360					365					
gcc	gtg	agg	aag	agg	tgg	cac	cgc	tgg	cag	gac	cat	cac	tcc	ctt	cga	1152	
Ala	Val	Arg	Lys	Arg	Trp	His	Arg	Trp	Gln	Asp	His	His	Ser	Leu	Arg		
		370				375					380						
gtc	ccc	atg	gcc	cgg	gcc	atg	tcc	atc	cct	aca	tca	ccc	aca	cgg	atc	1200	
Val	Pro	Met	Ala	Arg	Ala	Met	Ser	Ile	Pro	Thr	Ser	Pro	Thr	Arg	Ile		
385					390				395						400		
agc	ttc	cac	agc	atc	aag	cag	acg	gcc	gct	gtg	tga	cccctcggtc				1246	
Ser	Phe	His	Ser	Ile	Lys	Gln	Thr	Ala	Ala	Val							
				405				410									
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ctcagcgcaa	gaggaagcag	agggaattca	caggaccccc	tgagaagagc	cagtcagatg											1486	
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Ala Leu Ala Glu Glu Leu Leu Leu Asp Gly Trp Gly Pro Pro Leu Asp  
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Pro Glu Gly Pro Tyr Ser Tyr Cys Asn Thr Thr Leu Asp Gln Ile Gly  
 35 40 45

Thr Cys Trp Pro Arg Ser Ala Ala Gly Ala Leu Val Glu Arg Pro Cys  
 50 55 60

Pro Glu Tyr Phe Asn Gly Val Lys Tyr Asn Thr Thr Arg Asn Ala Tyr  
 65 70 75 80

Arg Glu Cys Leu Glu Asn Gly Thr Trp Ala Ser Lys Ile Asn Tyr Ser  
 85 90 95

Gln Cys Glu Pro Ile Leu Asp Asp Lys Gln Arg Lys Tyr Asp Leu His  
 100 105 110

Tyr Arg Ile Ala Leu Val Val Asn Tyr Leu Gly His Cys Val Ser Val  
 115 120 125

Ala Ala Leu Val Ala Ala Phe Leu Leu Phe Leu Ala Leu Arg Ser Ile  
 130 135 140

Arg Cys Leu Arg Asn Val Ile His Trp Asn Leu Ile Thr Thr Phe Ile  
 145 150 155 160

Leu Arg Asn Val Met Trp Phe Leu Leu Gln Leu Val Asp His Glu Val  
 165 170 175

His Glu Ser Asn Glu Val Trp Cys His Cys Ile Thr Thr Ile Phe Asn

180 185 190  
 Tyr Phe Val Val Thr Asn Phe Phe Trp Met Phe Val Glu Gly Cys Tyr  
 195 200 205  
 Leu His Thr Ala Ile Val Met Thr Tyr Ser Thr Glu Arg Leu Arg Lys  
 210 215 220  
 Cys Leu Phe Leu Phe Ile Gly Trp Cys Ile Pro Phe Pro Ile Ile Val  
 225 230 235 240  
 Ala Trp Ala Ile Gly Lys Leu Tyr Tyr Glu Asn Glu Gln Cys Trp Phe  
 245 250 255  
 Gly Lys Glu Pro Gly Asp Leu Val Asp Tyr Ile Tyr Gln Gly Pro Ile  
 260 265 270  
 Ile Leu Val Leu Leu Ile Asn Phe Val Phe Leu Phe Asn Ile Val Arg  
 275 280 285  
 Ile Leu Met Thr Lys Leu Arg Ala Ser Thr Thr Ser Glu Thr Ile Gln  
 290 295 300  
 Tyr Arg Lys Ala Val Lys Ala Thr Leu Val Leu Leu Pro Leu Leu Gly  
 305 310 315 320  
 Ile Thr Tyr Met Leu Phe Phe Val Asn Pro Gly Glu Asp Asp Leu Ser  
 325 330 335  
 Gln Ile Met Phe Ile Tyr Phe Asn Ser Phe Leu Gln Ser Phe Gln Gly  
 340 345 350  
 Phe Phe Val Ser Val Phe Tyr Cys Phe Phe Asn Gly Glu Val Arg Ser  
 355 360 365  
 Ala Val Arg Lys Arg Trp His Arg Trp Gln Asp His His Ser Leu Arg  
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 Val Pro Met Ala Arg Ala Met Ser Ile Pro Thr Ser Pro Thr Arg Ile  
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<212> DNA  
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                   Met Arg Gly Pro Ser Gly Pro Pro Gly Leu Leu Tyr Val  
                   1                  5                  10  
 cca cac ctc ctc ctc tgc ctg ctc tgc ctc ctc cca ccg ccg ctc caa 157  
 Pro His Leu Leu Leu Cys Leu Leu Cys Leu Leu Pro Pro Pro Leu Gln  
                   15                  20                  25  
 tac gca gcc ggg cag agc cag atg ccc aaa gac cag ccc ctg tgg gca 205  
 Tyr Ala Ala Gly Gln Ser Gln Met Pro Lys Asp Gln Pro Leu Trp Ala  
                   30                  35                  40                  45  
 ctt ctg gag cag tac tgc cac acc atc atg acc ctc acc aac ctc tca 253  
 Leu Leu Glu Gln Tyr Cys His Thr Ile Met Thr Leu Thr Asn Leu Ser  
                   50                  55                  60  
 ggt ccc tac tcc tac tgc aac acg acc ttg gac cag atc gga acg tgc 301  
 Gly Pro Tyr Ser Tyr Cys Asn Thr Thr Leu Asp Gln Ile Gly Thr Cys  
                   65                  70                  75  
 tgg ccc cgc agc gct gcc gga gcc ctc gtg gag agg ccg tgc ccc gag 349  
 Trp Pro Arg Ser Ala Ala Gly Ala Leu Val Glu Arg Pro Cys Pro Glu  
                   80                  85                  90  
 tac ttc aac ggc gtc aag tac aac acg acc cgg aat gcc tat cga gaa 397  
 Tyr Phe Asn Gly Val Lys Tyr Asn Thr Thr Arg Asn Ala Tyr Arg Glu  
                   95                  100                  105  
 tgc ttg gag aat ggg acg tgg gcc tca aag atc aac tac tca cag tgt 445  
 Cys Leu Glu Asn Gly Thr Trp Ala Ser Lys Ile Asn Tyr Ser Gln Cys  
                   110                  115                  120                  125  
 gag ccc att ttg gat gac aag cag agg aag tat gac ctg cac tac cgc 493  
 Glu Pro Ile Leu Asp Asp Lys Gln Arg Lys Tyr Asp Leu His Tyr Arg  
                   130                  135                  140  
 atc gcc ctt gtc gtc aac tac ctg ggc cac tgc gta tct gtg gca gcc 541  
 Ile Ala Leu Val Val Asn Tyr Leu Gly His Cys Val Ser Val Ala Ala  
                   145                  150                  155  
 ctg gtg gcc gcc ttc ctg ctt ttc ctg gcc ctg cgg agc att cgc tgt 589  
 Leu Val Ala Ala Phe Leu Leu Phe Leu Ala Leu Arg Ser Ile Arg Cys  
                   160                  165                  170  
 ctg cgg aat gtg att cac tgg aac ctc atc acc acc ttt atc ctg cga 637  
 Leu Arg Asn Val Ile His Trp Asn Leu Ile Thr Thr Phe Ile Leu Arg  
                   175                  180                  185  
 aat gtc atg tgg ttc ctg ctg cag ctc gtt gac cat gaa gtg cac gag 685  
 Asn Val Met Trp Phe Leu Leu Gln Leu Val Asp His Glu Val His Glu  
                   190                  195                  200                  205

agc aat gag gtc tgg tgc cgc tgc atc acc acc atc ttc aac tac ttc	733
Ser Asn Glu Val Trp Cys Arg Cys Ile Thr Thr Ile Phe Asn Tyr Phe	
210 215 220	
gtg gtg acc aac ttc ttc tgg atg ttt gtg gaa ggc tgc tac ctg cac	781
Val Val Thr Asn Phe Phe Trp Met Phe Val Glu Gly Cys Tyr Leu His	
225 230 235	
acg gcc att gtc atg acc tac tcc act gag cgc ctg cgc aag tgc ctc	829
Thr Ala Ile Val Met Thr Tyr Ser Thr Glu Arg Leu Arg Lys Cys Leu	
240 245 250	
ttc ctc ttc atc gga tgg tgc atc ccc ttc ccc atc atc gtc gcc tgg	877
Phe Leu Phe Ile Gly Trp Cys Ile Pro Phe Pro Ile Ile Val Ala Trp	
255 260 265	
gcc atc ggc aag ctc tac tat gag aat gaa cag tgc tgg ttt ggc aag	925
Ala Ile Gly Lys Leu Tyr Tyr Glu Asn Glu Gln Cys Trp Phe Gly Lys	
270 275 280 285	
gag cct ggc gac ctg gtg gac tac atc tac caa ggc ccc atc att ctc	973
Glu Pro Gly Asp Leu Val Asp Tyr Ile Tyr Gln Gly Pro Ile Ile Leu	
290 295 300	
gtg ctc ctg atc aat ttc gta ttt ctg ttc aac atc gtc agg atc cta	1021
Val Leu Leu Ile Asn Phe Val Phe Leu Phe Asn Ile Val Arg Ile Leu	
305 310 315	
atg aca aag tta cgc gcg tcc acc aca tcc gag aca atc cag tac agg	1069
Met Thr Lys Leu Arg Ala Ser Thr Thr Ser Glu Thr Ile Gln Tyr Arg	
320 325 330	
aag gca gtg aag gcc acc ctg gtg ctc ctg ccc ctc ctg ggc atc acc	1117
Lys Ala Val Lys Ala Thr Leu Val Leu Leu Pro Leu Leu Gly Ile Thr	
335 340 345	
tac atg ctc ttc ttc gtc aat ccc ggg gag gac gac ctg tca cag atc	1165
Tyr Met Leu Phe Phe Val Asn Pro Gly Glu Asp Asp Leu Ser Gln Ile	
350 355 360 365	
atg ttc atc tat ttc aac tcc ttc ctg cag tgc ttc cag ggt ttc ttc	1213
Met Phe Ile Tyr Phe Asn Ser Phe Leu Gln Ser Phe Gln Gly Phe Phe	
370 375 380	
gtg tct gtc ttc tac tgc ttc ttc aat gga gag gtg cgc tca gcc gtg	1261
Val Ser Val Phe Tyr Cys Phe Phe Asn Gly Glu Val Arg Ser Ala Val	
385 390 395	
agg aag agg tgg cac cgc tgg cag gac cat cac tcc ctt cga gtc ccc	1309
Arg Lys Arg Trp His Arg Trp Gln Asp His His Ser Leu Arg Val Pro	
400 405 410	
atg gcc cgg gcc atg tcc atc cct aca tca ccc aca cgg atc agc ttc	1357
Met Ala Arg Ala Met Ser Ile Pro Thr Ser Pro Thr Arg Ile Ser Phe	
415 420 425	
cac agc atc aag cag acg gcc gct gtg tga cccctcggtc gccacctgc	1407
His Ser Ile Lys Gln Thr Ala Ala Val	
430 435	

acagctcccc tgtcctcctc caccttcttc ctctgggttc tctgtgctgg gcaggctctc 1467  
 gtgggggcagg agatgggagg ggagagacca gctctccagc ctggcaggaa agaggggggtg 1527  
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 gaggaagcag agg 1600

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 <212> PRT  
 <213> Homo sapiens

<400> 12

Met Arg Gly Pro Ser Gly Pro Pro Gly Leu Leu Tyr Val Pro His Leu  
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Gly Gln Ser Gln Met Pro Lys Asp Gln Pro Leu Trp Ala Leu Leu Glu  
 35 40 45

Gln Tyr Cys His Thr Ile Met Thr Leu Thr Asn Leu Ser Gly Pro Tyr  
 50 55 60

Ser Tyr Cys Asn Thr Thr Leu Asp Gln Ile Gly Thr Cys Trp Pro Arg  
 65 70 75 80

Ser Ala Ala Gly Ala Leu Val Glu Arg Pro Cys Pro Glu Tyr Phe Asn  
 85 90 95

Gly Val Lys Tyr Asn Thr Thr Arg Asn Ala Tyr Arg Glu Cys Leu Glu  
 100 105 110

Asn Gly Thr Trp Ala Ser Lys Ile Asn Tyr Ser Gln Cys Glu Pro Ile  
 115 120 125

Leu Asp Asp Lys Gln Arg Lys Tyr Asp Leu His Tyr Arg Ile Ala Leu  
 130 135 140

Val Val Asn Tyr Leu Gly His Cys Val Ser Val Ala Ala Leu Val Ala  
 145 150 155 160

Ala Phe Leu Leu Phe Leu Ala Leu Arg Ser Ile Arg Cys Leu Arg Asn  
 165 170 175

Val Ile His Trp Asn Leu Ile Thr Thr Phe Ile Leu Arg Asn Val Met

180	185	190
Trp Phe Leu Leu Gln Leu Val	Asp His Glu Val His Glu Ser Asn Glu	
195	200	205
Val Trp Cys Arg Cys Ile Thr Thr Ile Phe Asn Tyr Phe Val Val Thr		
210	215	220
Asn Phe Phe Trp Met Phe Val Glu Gly Cys Tyr Leu His Thr Ala Ile		
225	230	235
Val Met Thr Tyr Ser Thr Glu Arg Leu Arg Lys Cys Leu Phe Leu Phe		
	245	250
Ile Gly Trp Cys Ile Pro Phe Pro Ile Ile Val Ala Trp Ala Ile Gly		
	260	265
Lys Leu Tyr Tyr Glu Asn Glu Gln Cys Trp Phe Gly Lys Glu Pro Gly		
	275	280
Asp Leu Val Asp Tyr Ile Tyr Gln Gly Pro Ile Ile Leu Val Leu Leu		
	290	295
Ile Asn Phe Val Phe Leu Phe Asn Ile Val Arg Ile Leu Met Thr Lys		
305	310	315
Leu Arg Ala Ser Thr Thr Ser Glu Thr Ile Gln Tyr Arg Lys Ala Val		
	325	330
Lys Ala Thr Leu Val Leu Leu Pro Leu Leu Gly Ile Thr Tyr Met Leu		
	340	345
Phe Phe Val Asn Pro Gly Glu Asp Asp Leu Ser Gln Ile Met Phe Ile		
	355	360
Tyr Phe Asn Ser Phe Leu Gln Ser Phe Gln Gly Phe Phe Val Ser Val		
	370	375
Phe Tyr Cys Phe Phe Asn Gly Glu Val Arg Ser Ala Val Arg Lys Arg		
385	390	395
Trp His Arg Trp Gln Asp His His Ser Leu Arg Val Pro Met Ala Arg		
	405	410
Ala Met Ser Ile Pro Thr Ser Pro Thr Arg Ile Ser Phe His Ser Ile		
	420	425
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Lys Gln Thr Ala Ala Val  
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<212> DNA  
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caacacacac acatatgccca gggttgggtca a atg gga aga gag cct tgg cct 172  
Met Gly Arg Glu Pro Trp Pro  
1 5  
gaa gac agg gac ctg ggc ttt cct cag ctc ttc tgc caa ggt ccc tac 220  
Glu Asp Arg Asp Leu Gly Phe Pro Gln Leu Phe Cys Gln Gly Pro Tyr  
10 15 20  
tcc tac tgc aac acg acc ttg gac cag atc gga acg tgc tgg ccc cgc 268  
Ser Tyr Cys Asn Thr Thr Leu Asp Gln Ile Gly Thr Cys Trp Pro Arg  
25 30 35  
agc gct gcc gga gcc ctc gtg gag agg ccg tgc ccc gag tac ttc aac 316  
Ser Ala Ala Gly Ala Leu Val Glu Arg Pro Cys Pro Glu Tyr Phe Asn  
40 45 50 55  
ggc gtc aag tac aac acg acc cgg aat gcc tat cga gaa tgc ttg gag 364  
Gly Val Lys Tyr Asn Thr Thr Arg Asn Ala Tyr Arg Glu Cys Leu Glu  
60 65 70  
aat ggg acg tgg gcc tca aag atc aac tac tca cag tgt gag ccc att 412  
Asn Gly Thr Trp Ala Ser Lys Ile Asn Tyr Ser Gln Cys Glu Pro Ile  
75 80 85  
ttg gat gac aag cag agg aag tat gac ctg cac tac cgc atc gcc ctt 460  
Leu Asp Asp Lys Gln Arg Lys Tyr Asp Leu His Tyr Arg Ile Ala Leu  
90 95 100  
gtc gtc aac tac ctg ggc cac tgc gta tct gtg gca gcc ctg gtg gcc 508  
Val Val Asn Tyr Leu Gly His Cys Val Ser Val Ala Ala Leu Val Ala  
105 110 115  
gcc ttc ctg ctt ttc ctg gcc ctg cgg agc att cgc tgt ctg cgg aat 556  
Ala Phe Leu Leu Phe Leu Ala Leu Arg Ser Ile Arg Cys Leu Arg Asn  
120 125 130 135  
gtg att cac tgg aac ctc atc acc acc ttt atc ctg cga aat gtc atg 604  
Val Ile His Trp Asn Leu Ile Thr Thr Phe Ile Leu Arg Asn Val Met  
140 145 150  
tgg ttc ctg ctg cag ctc gtt gac cat gaa gtg cac gag agc aat gag 652

Trp Phe Leu Leu Gln Leu Val Asp His Glu Val His Glu Ser Asn Glu	
155 160 165	
gtc tgg tgc cgc tgc atc acc acc atc ttc aac tac ttc gtg gtg acc	700
Val Trp Cys Arg Cys Ile Thr Thr Ile Phe Asn Tyr Phe Val Val Thr	
170 175 180	
aac ttc ttc tgg atg ttt gtg gaa ggc tgc tac ctg cac acg gcc att	748
Asn Phe Phe Trp Met Phe Val Glu Gly Cys Tyr Leu His Thr Ala Ile	
185 190 195	
gtc atg acc tac tcc act gag cgc ctg cgc aag tgc ctc ttc ctc ttc	796
Val Met Thr Tyr Ser Thr Glu Arg Leu Arg Lys Cys Leu Phe Leu Phe	
200 205 210 215	
atc gga tgg tgc atc ccc ttc ccc atc atc gtc gcc tgg gcc atc ggc	844
Ile Gly Trp Cys Ile Pro Phe Pro Ile Ile Val Ala Trp Ala Ile Gly	
220 225 230	
aag ctc tac tat gag aat gaa cag tgc tgg ttt ggc aag gag cct ggc	892
Lys Leu Tyr Tyr Glu Asn Glu Gln Cys Trp Phe Gly Lys Glu Pro Gly	
235 240 245	
gac ctg gtg gac tac atc tac caa ggc ccc atc att ctc gtg ctc ctg	940
Asp Leu Val Asp Tyr Ile Tyr Gln Gly Pro Ile Ile Leu Val Leu Leu	
250 255 260	
atc aat ttc gta ttt ctg ttc aac atc gtc agg atc cta atg aca aag	988
Ile Asn Phe Val Phe Leu Phe Asn Ile Val Arg Ile Leu Met Thr Lys	
265 270 275	
tta cgc gcg tcc acc aca tcc gag aca atc cag tac agg aag gca gtg	1036
Leu Arg Ala Ser Thr Thr Ser Glu Thr Ile Gln Tyr Arg Lys Ala Val	
280 285 290 295	
aag gcc acc ctg gtg ctc ctg ccc ctc ctg ggc atc acc tac atg ctc	1084
Lys Ala Thr Leu Val Leu Leu Pro Leu Leu Gly Ile Thr Tyr Met Leu	
300 305 310	
ttc ttc gtc aat ccc ggg gag gac gac ctg tca cag atc atg ttc atc	1132
Phe Phe Val Asn Pro Gly Glu Asp Asp Leu Ser Gln Ile Met Phe Ile	
315 320 325	
tat ttc aac tcc ttc ctg cag tgc ttc cag ggt ttc ttc gtg tct gtc	1180
Tyr Phe Asn Ser Phe Leu Gln Ser Phe Gln Gly Phe Phe Val Ser Val	
330 335 340	
ttc tac tgc ttc ttc aat gga gag gtg cgc tca gcc gtg agg aag agg	1228
Phe Tyr Cys Phe Phe Asn Gly Glu Val Arg Ser Ala Val Arg Lys Arg	
345 350 355	
tgg cac cgc tgg cag gac cat cac tcc ctt cga gtc ccc atg gcc cgg	1276
Trp His Arg Trp Gln Asp His His Ser Leu Arg Val Pro Met Ala Arg	
360 365 370 375	
gcc atg tcc atc cct aca tca ccc aca cgg atc agc ttc cac agc atc	1324
Ala Met Ser Ile Pro Thr Ser Pro Thr Arg Ile Ser Phe His Ser Ile	
380 385 390	
aag cag acg gcc gct gtg tga cccctcggtc gccacactgc acagctcccc	1375
Lys Gln Thr Ala Ala Val	

395

tgtcctcctc caccttcttc ctctgggttc tctgtgctgg gcaggctctc gtggggcagg 1435  
 agatgggagg ggagagacca gctctccagc ctggcaggaa agaggggggtg cggcagccaa 1495  
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 agg 1558

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 <212> PRT  
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<400> 14

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Leu Phe Cys Gln Gly Pro Tyr Ser Tyr Cys Asn Thr Thr Leu Asp Gln  
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Ile Gly Thr Cys Trp Pro Arg Ser Ala Ala Gly Ala Leu Val Glu Arg  
 35 40 45

Pro Cys Pro Glu Tyr Phe Asn Gly Val Lys Tyr Asn Thr Thr Arg Asn  
 50 55 60

Ala Tyr Arg Glu Cys Leu Glu Asn Gly Thr Trp Ala Ser Lys Ile Asn  
 65 70 75 80

Tyr Ser Gln Cys Glu Pro Ile Leu Asp Asp Lys Gln Arg Lys Tyr Asp  
 85 90 95

Leu His Tyr Arg Ile Ala Leu Val Val Asn Tyr Leu Gly His Cys Val  
 100 105 110

Ser Val Ala Ala Leu Val Ala Ala Phe Leu Leu Phe Leu Ala Leu Arg  
 115 120 125

Ser Ile Arg Cys Leu Arg Asn Val Ile His Trp Asn Leu Ile Thr Thr  
 130 135 140

Phe Ile Leu Arg Asn Val Met Trp Phe Leu Leu Gln Leu Val Asp His  
 145 150 155 160

Glu Val His Glu Ser Asn Glu Val Trp Cys Arg Cys Ile Thr Thr Ile  
 165 170 175

Phe Asn Tyr Phe Val Val Thr Asn Phe Phe Trp Met Phe Val Glu Gly  
180 185 190

Cys Tyr Leu His Thr Ala Ile Val Met Thr Tyr Ser Thr Glu Arg Leu  
195 200 205

Arg Lys Cys Leu Phe Leu Phe Ile Gly Trp Cys Ile Pro Phe Pro Ile  
210 215 220

Ile Val Ala Trp Ala Ile Gly Lys Leu Tyr Tyr Glu Asn Glu Gln Cys  
225 230 235 240

Trp Phe Gly Lys Glu Pro Gly Asp Leu Val Asp Tyr Ile Tyr Gln Gly  
245 250 255

Pro Ile Ile Leu Val Leu Leu Ile Asn Phe Val Phe Leu Phe Asn Ile  
260 265 270

Val Arg Ile Leu Met Thr Lys Leu Arg Ala Ser Thr Thr Ser Glu Thr  
275 280 285

Ile Gln Tyr Arg Lys Ala Val Lys Ala Thr Leu Val Leu Leu Pro Leu  
290 295 300

Leu Gly Ile Thr Tyr Met Leu Phe Phe Val Asn Pro Gly Glu Asp Asp  
305 310 315 320

Leu Ser Gln Ile Met Phe Ile Tyr Phe Asn Ser Phe Leu Gln Ser Phe  
325 330 335

Gln Gly Phe Phe Val Ser Val Phe Tyr Cys Phe Phe Asn Gly Glu Val  
340 345 350

Arg Ser Ala Val Arg Lys Arg Trp His Arg Trp Gln Asp His His Ser  
355 360 365

Leu Arg Val Pro Met Ala Arg Ala Met Ser Ile Pro Thr Ser Pro Thr  
370 375 380

Arg Ile Ser Phe His Ser Ile Lys Gln Thr Ala Ala Val  
385 390 395

<210> 15  
<211> 1411  
<212> DNA  
<213> Rattus norvegicus

[illegible]

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Thr	Tyr	Ser	Thr	Asp	Arg	Leu	Arg	Lys	Trp	Met	Phe	Val	Cys	Ile	Gly		
220					225					230					235		
tgg	ggt	gta	cct	ttc	ccc	atc	att	gtg	gct	tgg	gcc	att	ggg	aag	ctg	832	
Trp	Gly	Val	Pro	Phe	Pro	Ile	Ile	Val	Ala	Trp	Ala	Ile	Gly	Lys	Leu		
				240					245					250			
cac	tac	gac	aat	gaa	aag	tgc	tgg	ttt	ggc	aaa	cgt	cct	ggg	gta	tac	880	
His	Tyr	Asp	Asn	Glu	Lys	Cys	Trp	Phe	Gly	Lys	Arg	Pro	Gly	Val	Tyr		
			255					260					265				
act	gac	tac	atc	tac	cag	ggc	ccc	atg	atc	ctg	gtc	ctg	ctg	atc	aac	928	
Thr	Asp	Tyr	Ile	Tyr	Gln	Gly	Pro	Met	Ile	Leu	Val	Leu	Leu	Ile	Asn		
		270					275					280					
ttt	atc	ttt	ctc	ttc	aac	att	gtc	cgc	atc	ctc	atg	acc	aaa	ctc	cgg	976	
Phe	Ile	Phe	Leu	Phe	Asn	Ile	Val	Arg	Ile	Leu	Met	Thr	Lys	Leu	Arg		
	285					290					295						
gca	tcc	act	aca	tct	gag	acc	att	cag	tac	agg	aag	gct	gtg	aag	gcc	1024	
Ala	Ser	Thr	Thr	Ser	Glu	Thr	Ile	Gln	Tyr	Arg	Lys	Ala	Val	Lys	Ala		
300					305					310					315		
act	ctg	gtg	ctc	ctg	ccc	ctt	ctg	ggc	atc	acc	tac	atg	ttg	ttc	ttc	1072	
Thr	Leu	Val	Leu	Leu	Pro	Leu	Leu	Gly	Ile	Thr	Tyr	Met	Leu	Phe	Phe		
				320				325						330			
gtc	aac	cct	gga	gag	gac	gag	gtc	tcc	agg	gtc	gtc	ttc	atc	tac	ttc	1120	
Val	Asn	Pro	Gly	Glu	Asp	Glu	Val	Ser	Arg	Val	Val	Phe	Ile	Tyr	Phe		
			335					340					345				
aac	tct	ttt	ctg	gag	tcc	ttt	cag	ggc	ttc	ttt	gtg	tct	gtg	ttc	tac	1168	
Asn	Ser	Phe	Leu	Glu	Ser	Phe	Gln	Gly	Phe	Phe	Val	Ser	Val	Phe	Tyr		
		350					355					360					
tgt	ttt	ctg	aac	agt	gag	gtc	cgc	tcc	gct	atc	cgg	aag	agg	tgg	cgt	1216	
Cys	Phe	Leu	Asn	Ser	Glu	Val	Arg	Ser	Ala	Ile	Arg	Lys	Arg	Trp	Arg		
	365					370					375						
cgg	tgg	cag	gac	aag	cac	tcc	atc	aga	gcc	cga	gtg	gcc	cga	gct	atg	1264	
Arg	Trp	Gln	Asp	Lys	His	Ser	Ile	Arg	Ala	Arg	Val	Ala	Arg	Ala	Met		
380					385					390					395		
tcc	atc	ccc	acc	tcc	ccg	acc	aga	gtc	agc	ttt	cac	agc	atc	aag	cag	1312	
Ser	Ile	Pro	Thr	Ser	Pro	Thr	Arg	Val	Ser	Phe	His	Ser	Ile	Lys	Gln		
				400					405					410			
tcc	aca	gca	gtg	tga	gctccaggcc	acagagcagc	cccccaagacc	tgaggccggg								1367	
Ser	Thr	Ala	Val														
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gagatgatgc	aagctcactg	acgagccagt	ctgcagacgc	aagc												1411	
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<213> Rattus norvegicus

<400> 16

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Gly Leu Asn Pro Val Ser Thr Ser Leu Gln Asp Gln Arg Cys Glu Asn  
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Leu Ser Leu Thr Ser Asn Val Ser Gly Leu Gln Cys Asn Ala Ser Val  
35 40 45

Asp Leu Ile Gly Thr Cys Trp Pro Arg Ser Pro Ala Gly Gln Leu Val  
50 55 60

Val Arg Pro Cys Pro Ala Phe Phe Tyr Gly Val Arg Tyr Asn Thr Thr  
65 70 75 80

Asn Asn Gly Tyr Arg Glu Cys Leu Ala Asn Gly Ser Trp Ala Ala Arg  
85 90 95

Val Asn Tyr Ser Glu Cys Gln Glu Ile Leu Asn Glu Glu Lys Lys Ser  
100 105 110

Lys Val His Tyr His Val Ala Val Ile Ile Asn Tyr Leu Gly His Cys  
115 120 125

Ile Ser Leu Val Ala Leu Leu Val Ala Phe Val Leu Phe Leu Arg Leu  
130 135 140

Arg Ser Ile Arg Cys Leu Arg Asn Ile Ile His Trp Asn Leu Ile Ser  
145 150 155 160

Ala Phe Ile Leu Arg Asn Ala Thr Trp Phe Val Val Gln Leu Thr Val  
165 170 175

Ser Pro Glu Val His Gln Ser Asn Val Ala Trp Cys Arg Leu Val Thr  
180 185 190

Ala Ala Tyr Asn Tyr Phe His Val Thr Asn Phe Phe Trp Met Phe Gly  
195 200 205

Glu Gly Cys Tyr Leu His Thr Ala Ile Val Leu Thr Tyr Ser Thr Asp  
210 215 220

Arg Leu Arg Lys Trp Met Phe Val Cys Ile Gly Trp Gly Val Pro Phe

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Lys	Cys	Trp	Phe	Gly	Lys	Arg	Pro	Gly	Val	Tyr	Thr	Asp	Tyr	Ile	Tyr
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Gln	Gly	Pro	Met	Ile	Leu	Val	Leu	Leu	Ile	Asn	Phe	Ile	Phe	Leu	Phe
		275					280					285			
Asn	Ile	Val	Arg	Ile	Leu	Met	Thr	Lys	Leu	Arg	Ala	Ser	Thr	Thr	Ser
	290					295					300				
Glu	Thr	Ile	Gln	Tyr	Arg	Lys	Ala	Val	Lys	Ala	Thr	Leu	Val	Leu	Leu
305					310					315					320
Pro	Leu	Leu	Gly	Ile	Thr	Tyr	Met	Leu	Phe	Phe	Val	Asn	Pro	Gly	Glu
				325					330					335	
Asp	Glu	Val	Ser	Arg	Val	Val	Phe	Ile	Tyr	Phe	Asn	Ser	Phe	Leu	Glu
			340					345					350		
Ser	Phe	Gln	Gly	Phe	Phe	Val	Ser	Val	Phe	Tyr	Cys	Phe	Leu	Asn	Ser
		355					360					365			
Glu	Val	Arg	Ser	Ala	Ile	Arg	Lys	Arg	Trp	Arg	Arg	Trp	Gln	Asp	Lys
	370					375					380				
His	Ser	Ile	Arg	Ala	Arg	Val	Ala	Arg	Ala	Met	Ser	Ile	Pro	Thr	Ser
385					390					395					400
Pro	Thr	Arg	Val	Ser	Phe	His	Ser	Ile	Lys	Gln	Ser	Thr	Ala	Val	
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 <213> Rattus norvegicus

<220>  
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cgctgcactc tctggtggct ccgcgtcgcg ccaggctccct cgcagccacg cggggcgcgc	180
actcccactc ccaacgcgcg cggctccgga gcgca atg gac gcg gcg ctg ctc	233
Met Asp Ala Ala Leu Leu	
1 5	
ctc agc ctg ctg gag gcc aac tgc agc ctg gca ctg gcc gaa gag ctg	281
Leu Ser Leu Leu Glu Ala Asn Cys Ser Leu Ala Leu Ala Glu Glu Leu	
10 15 20	
ctt ttg gac ggc tgg gga gag ccc ccg gac ccc gaa ggt ccc tac tcc	329
Leu Leu Asp Gly Trp Gly Glu Pro Pro Asp Pro Glu Gly Pro Tyr Ser	
25 30 35	
tac tgc aac acg acc ttg gac cag atc ggg acc tgc tgg ccc cag agc	377
Tyr Cys Asn Thr Thr Leu Asp Gln Ile Gly Thr Cys Trp Pro Gln Ser	
40 45 50	
gcg cct gga gcc cta gtg gag aga cca tgc ccc gaa tac ttc aac ggc	425
Ala Pro Gly Ala Leu Val Glu Arg Pro Cys Pro Glu Tyr Phe Asn Gly	
55 60 65 70	
atc aag tac aac acg acc cgg aat gcc tac aga gaa tgc ctg gag aat	473
Ile Lys Tyr Asn Thr Thr Arg Asn Ala Tyr Arg Glu Cys Leu Glu Asn	
75 80 85	
ggg acc tgg gcc tca agg atc aac tac tca cac tgt gaa ccc att ttg	521
Gly Thr Trp Ala Ser Arg Ile Asn Tyr Ser His Cys Glu Pro Ile Leu	
90 95 100	
gat gac aag cag agg aag tat gac ctg cat tac cga atc gcc ctc atc	569
Asp Asp Lys Gln Arg Lys Tyr Asp Leu His Tyr Arg Ile Ala Leu Ile	
105 110 115	
atc aac tac ctg ggc cac tgt gtt tcc gtg gtg gcc ctg gtg gct gct	617
Ile Asn Tyr Leu Gly His Cys Val Ser Val Val Ala Leu Val Ala Ala	
120 125 130	
ttc ctg ctt ttc cta gtg ctg cgg agt atc cgc tgc ctg cgg aat gtg	665
Phe Leu Leu Phe Leu Val Leu Arg Ser Ile Arg Cys Leu Arg Asn Val	
135 140 145 150	
atc cac tgg aac ctc atc acc acc ttc atc ctg aga aac atc acg tgg	713
Ile His Trp Asn Leu Ile Thr Thr Phe Ile Leu Arg Asn Ile Thr Trp	
155 160 165	
ttc ctg ctg caa ctc atc gac cac gaa gtg cat gag ggc aat gag gtc	761
Phe Leu Leu Gln Leu Ile Asp His Glu Val His Glu Gly Asn Glu Val	
170 175 180	
tgg tgc cgc tgc gtc acc acc ata ttc aac tac ttt gtg gtc acc aac	809
Trp Cys Arg Cys Val Thr Thr Ile Phe Asn Tyr Phe Val Val Thr Asn	
185 190 195	
ttc ttc tgg atg ttt gtg gaa ggc tgc tac ctg cac acg gcc atc gtc	857
Phe Phe Trp Met Phe Val Glu Gly Cys Tyr Leu His Thr Ala Ile Val	
200 205 210	
atg acg tac tcc acg gag cat ctg cgc aag tgg ctc ttc ctc ttc att	905
Met Thr Tyr Ser Thr Glu His Leu Arg Lys Trp Leu Phe Leu Phe Ile	
215 220 225 230	

gga tgg tgc ata ccc tgc cct atc att gtc gcc tgg gca gtt ggc aaa	953
Gly Trp Cys Ile Pro Cys Pro Ile Ile Val Ala Trp Ala Val Gly Lys	
235 240 245	
ctc tac tat gag aat gag cag tgc tgg ttt ggc aag gaa cct ggt gac	1001
Leu Tyr Tyr Glu Asn Glu Gln Cys Trp Phe Gly Lys Glu Pro Gly Asp	
250 255 260	
tta gtg gac tac atc tac cag ggc ccc atc atc ctc gtg ctc ctc atc	1049
Leu Val Asp Tyr Ile Tyr Gln Gly Pro Ile Ile Leu Val Leu Leu Ile	
265 270 275	
aat ttt gtg ttt ctg ttc aac atc gtc agg atc ctg atg aca aaa ctg	1097
Asn Phe Val Phe Leu Phe Asn Ile Val Arg Ile Leu Met Thr Lys Leu	
280 285 290	
cga gcc tcc acc aca tcc gag acc atc cag tac agg aag gca gtg aag	1145
Arg Ala Ser Thr Thr Ser Glu Thr Ile Gln Tyr Arg Lys Ala Val Lys	
295 300 305 310	
gcc acc ctg gtc ctc ctc ccc ctg ttg ggc atc acc tac atg ctc ttc	1193
Ala Thr Leu Val Leu Leu Pro Leu Leu Gly Ile Thr Tyr Met Leu Phe	
315 320 325	
ttt gtc aat cct gga gag gac gac ctg tca cag att gtg ttc atc tac	1241
Phe Val Asn Pro Gly Glu Asp Asp Leu Ser Gln Ile Val Phe Ile Tyr	
330 335 340	
ttc aac tct ttc ctg cag tcc ttt cag ggt ttc ttt gtg tcc gtt ttc	1289
Phe Asn Ser Phe Leu Gln Ser Phe Gln Gly Phe Phe Val Ser Val Phe	
345 350 355	
tac tgc ttc ttc aat gga gag gtg cgc tcc gcc ctg aga aag cgg tgg	1337
Tyr Cys Phe Phe Asn Gly Glu Val Arg Ser Ala Leu Arg Lys Arg Trp	
360 365 370	
cac cgt tgg cag gac cac cac gcc ctc cga gtg cct gtg gcc cgg gcc	1385
His Arg Trp Gln Asp His His Ala Leu Arg Val Pro Val Ala Arg Ala	
375 380 385 390	
atg tcc att ccc aca tcg ccc acc agg atc agc ttc cac agc atc aag	1433
Met Ser Ile Pro Thr Ser Pro Thr Arg Ile Ser Phe His Ser Ile Lys	
395 400 405	
cag aca gct gcc gtg tga tcccctgtca cccatctgcc cagcactcca	1481
Gln Thr Ala Ala Val	
410	
ccaccgaggc ggcttcctca ttcttcacag ccttccttggt gtctccttg ctacactgac	1541
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gaaatggagg ctctgaaaga ccagg	1626
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<212> PRT	
<213> Rattus norvegicus	

<400> 18

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Pro Glu Gly Pro Tyr Ser Tyr Cys Asn Thr Thr Leu Asp Gln Ile Gly  
35 40 45

Thr Cys Trp Pro Gln Ser Ala Pro Gly Ala Leu Val Glu Arg Pro Cys  
50 55 60

Pro Glu Tyr Phe Asn Gly Ile Lys Tyr Asn Thr Thr Arg Asn Ala Tyr  
65 70 75 80

Arg Glu Cys Leu Glu Asn Gly Thr Trp Ala Ser Arg Ile Asn Tyr Ser  
85 90 95

His Cys Glu Pro Ile Leu Asp Asp Lys Gln Arg Lys Tyr Asp Leu His  
100 105 110

Tyr Arg Ile Ala Leu Ile Ile Asn Tyr Leu Gly His Cys Val Ser Val  
115 120 125

Val Ala Leu Val Ala Ala Phe Leu Leu Phe Leu Val Leu Arg Ser Ile  
130 135 140

Arg Cys Leu Arg Asn Val Ile His Trp Asn Leu Ile Thr Thr Phe Ile  
145 150 155 160

Leu Arg Asn Ile Thr Trp Phe Leu Leu Gln Leu Ile Asp His Glu Val  
165 170 175

His Glu Gly Asn Glu Val Trp Cys Arg Cys Val Thr Thr Ile Phe Asn  
180 185 190

Tyr Phe Val Val Thr Asn Phe Phe Trp Met Phe Val Glu Gly Cys Tyr  
195 200 205

Leu His Thr Ala Ile Val Met Thr Tyr Ser Thr Glu His Leu Arg Lys  
210 215 220

Trp Leu Phe Leu Phe Ile Gly Trp Cys Ile Pro Cys Pro Ile Ile Val  
225 230 235 240

Ala Trp Ala Val Gly Lys Leu Tyr Tyr Glu Asn Glu Gln Cys Trp Phe  
245 250 255

Gly Lys Glu Pro Gly Asp Leu Val Asp Tyr Ile Tyr Gln Gly Pro Ile  
260 265 270

Ile Leu Val Leu Leu Ile Asn Phe Val Phe Leu Phe Asn Ile Val Arg  
275 280 285

Ile Leu Met Thr Lys Leu Arg Ala Ser Thr Thr Ser Glu Thr Ile Gln  
290 295 300

Tyr Arg Lys Ala Val Lys Ala Thr Leu Val Leu Leu Pro Leu Leu Gly  
305 310 315 320

Ile Thr Tyr Met Leu Phe Phe Val Asn Pro Gly Glu Asp Asp Leu Ser  
325 330 335

Gln Ile Val Phe Ile Tyr Phe Asn Ser Phe Leu Gln Ser Phe Gln Gly  
340 345 350

Phe Phe Val Ser Val Phe Tyr Cys Phe Phe Asn Gly Glu Val Arg Ser  
355 360 365

Ala Leu Arg Lys Arg Trp His Arg Trp Gln Asp His His Ala Leu Arg  
370 375 380

Val Pro Val Ala Arg Ala Met Ser Ile Pro Thr Ser Pro Thr Arg Ile  
385 390 395 400

Ser Phe His Ser Ile Lys Gln Thr Ala Ala Val  
405 410

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<213> Rattus norvegicus

<220>  
<221> CDS  
<222> (44)..(1339)

<400> 19  
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ggc tct ctt ccc agt gca caa ctc ctc ctc tgc cta tac tct ctg ctc 103  
Gly Ser Leu Pro Ser Ala Gln Leu Leu Leu Cys Leu Tyr Ser Leu Leu

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cca ctg ctc cag gtg gcc caa cca ggc agg cca ctc cag gac cag ccc	Pro Leu Leu Gln Val Ala Gln Pro Gly Arg Pro Leu Gln Asp Gln Pro	151		
	25 30 35			
ctg tgg aca ctt ttg gag cag tac tgc cat agg acc aca act cgg aat	Leu Trp Thr Leu Leu Glu Gln Tyr Cys His Arg Thr Thr Thr Arg Asn	199		
	40 45 50			
ttt tca ggt ccc tac tcc tac tgc tac acg acc ttg gac cag atc ggg	Phe Ser Gly Pro Tyr Ser Tyr Cys Tyr Thr Thr Leu Asp Gln Ile Gly	247		
	55 60 65			
acc tgc tgg ccc cag agc gcg cct gga gcc cta gtg gag aga cca tgc	Thr Cys Trp Pro Gln Ser Ala Pro Gly Ala Leu Val Glu Arg Pro Cys	295		
	70 75 80			
ccc gaa tac ttc aac ggc atc aag tac aac acg acc cgg aat gcc tac	Pro Glu Tyr Phe Asn Gly Ile Lys Tyr Asn Thr Thr Arg Asn Ala Tyr	343		
	85 90 95 100			
aga gaa tgc ctg gag aat ggg acc tgg gcc tca agg atc aac tac tca	Arg Glu Cys Leu Glu Asn Gly Thr Trp Ala Ser Arg Ile Asn Tyr Ser	391		
	105 110 115			
cac tgt gaa ccc att ttg gat gac aag cag agg aag tat gac ctg cat	His Cys Glu Pro Ile Leu Asp Asp Lys Gln Arg Lys Tyr Asp Leu His	439		
	120 125 130			
tac cga atc gcc ctc atc atc aac tac ctg ggc cac tgt gtt tcc gtg	Tyr Arg Ile Ala Leu Ile Ile Asn Tyr Leu Gly His Cys Val Ser Val	487		
	135 140 145			
gtg gcc ctg gtg gct gct ttc ctg ctt ttc cta gtg ctg cgg agt atc	Val Ala Leu Val Ala Ala Phe Leu Leu Phe Leu Val Leu Arg Ser Ile	535		
	150 155 160			
cgc tgc ctg cgg aat gtg atc cac tgg aac ctc atc acc acc ttc atc	Arg Cys Leu Arg Asn Val Ile His Trp Asn Leu Ile Thr Thr Phe Ile	583		
	165 170 175 180			
ctg aga aac atc acg tgg ttc ctg ctg caa ctc atc gac cac gaa gtg	Leu Arg Asn Ile Thr Trp Phe Leu Leu Gln Leu Ile Asp His Glu Val	631		
	185 190 195			
cat gag ggc aat gag gtc tgg tgc cgc tgc gtc acc acc ata ttc aac	His Glu Gly Asn Glu Val Trp Cys Arg Cys Val Thr Thr Ile Phe Asn	679		
	200 205 210			
tac ttt gtg gtc acc aac ttc ttc tgg atg ttt gtg gaa ggc tgc tac	Tyr Phe Val Val Thr Asn Phe Phe Trp Met Phe Val Glu Gly Cys Tyr	727		
	215 220 225			
ctg cac acg gcc atc gtc atg acg tac tcc acg gag cat ctg cgc aag	Leu His Thr Ala Ile Val Met Thr Tyr Ser Thr Glu His Leu Arg Lys	775		
	230 235 240			
tgg ctc ttc ctc ttc att gga tgg tgc ata ccc tgc cct atc att gtc	Trp Leu Phe Leu Phe Ile Gly Trp Cys Ile Pro Cys Pro Ile Ile Val	823		
	245 250 255 260			

gcc tgg gca gtt ggc aaa ctc tac tat gag aat gag cag tgc tgg ttt	871
Ala Trp Ala Val Gly Lys Leu Tyr Tyr Glu Asn Glu Gln Cys Trp Phe	
265 270 275	
ggc aag gaa cct ggt gac tta gtg gac tac atc tac cag ggc ccc atc	919
Gly Lys Glu Pro Gly Asp Leu Val Asp Tyr Ile Tyr Gln Gly Pro Ile	
280 285 290	
atc ctc gtg ctc ctc atc aat ttt gtg ttt ctg ttc aac atc gtc agg	967
Ile Leu Val Leu Leu Ile Asn Phe Val Phe Leu Phe Asn Ile Val Arg	
295 300 305	
atc ctg atg aca aaa ctg cga gcc tcc acc aca tcc gag acc atc cag	1015
Ile Leu Met Thr Lys Leu Arg Ala Ser Thr Thr Ser Glu Thr Ile Gln	
310 315 320	
tac agg aag gca gtg aag gcc aac ctg gtc ctc ctc ccc ctg ttg ggc	1063
Tyr Arg Lys Ala Val Lys Ala Asn Leu Val Leu Leu Pro Leu Leu Gly	
325 330 335 340	
atc acc tac atg ctc ttc ttt gtc aat cct gga gag gac gac ctg tca	1111
Ile Thr Tyr Met Leu Phe Phe Val Asn Pro Gly Glu Asp Asp Leu Ser	
345 350 355	
cag att gtg ttc atc tac ttc aac tct ttc ctg cag tcc ttt cag ggt	1159
Gln Ile Val Phe Ile Tyr Phe Asn Ser Phe Leu Gln Ser Phe Gln Gly	
360 365 370	
ttc ttt gtg tcc gtt ttc tac tgc ttc ttc aat gga gag gtg cgc tcc	1207
Phe Phe Val Ser Val Phe Tyr Cys Phe Phe Asn Gly Glu Val Arg Ser	
375 380 385	
gcc ctg aga aag cgg tgg cac cgt tgg cag gac cac cac gcc ctc cga	1255
Ala Leu Arg Lys Arg Trp His Arg Trp Gln Asp His His Ala Leu Arg	
390 395 400	
gtg cct gtg gcc cgg gcc atg tcc att ccc aca tcg ccc acc agg atc	1303
Val Pro Val Ala Arg Ala Met Ser Ile Pro Thr Ser Pro Thr Arg Ile	
405 410 415 420	
agc ttc cac agc atc aag cag aca gct gcc gtg tga tccccctgtca	1349
Ser Phe His Ser Ile Lys Gln Thr Ala Ala Val	
425 430	
cccatctgcc cagcaactcca ccaccgagggc ggcttccctca ttcttcacag ccttccttg	1409
gtcctccttg ctacactgac ccttgggtgc aggagaaggg ggggtggatg aactctcctg	1469
ccggaagaaa ggaaaactat gaaatggagg ctctgaaaga ccagg	1514

<210> 20  
 <211> 431  
 <212> PRT  
 <213> Rattus norvegicus

<400> 20

Met Gly His Pro Gly Ser Leu Pro Ser Ala Gln Leu Leu Leu Cys Leu
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Tyr Ser Leu Leu Pro Leu Leu Gln Val Ala Gln Pro Gly Arg Pro Leu  
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Gln Asp Gln Pro Leu Trp Thr Leu Leu Glu Gln Tyr Cys His Arg Thr  
 35 40 45

Thr Thr Arg Asn Phe Ser Gly Pro Tyr Ser Tyr Cys Tyr Thr Thr Leu  
 50 55 60

Asp Gln Ile Gly Thr Cys Trp Pro Gln Ser Ala Pro Gly Ala Leu Val  
 65 70 75 80

Glu Arg Pro Cys Pro Glu Tyr Phe Asn Gly Ile Lys Tyr Asn Thr Thr  
 85 90 95

Arg Asn Ala Tyr Arg Glu Cys Leu Glu Asn Gly Thr Trp Ala Ser Arg  
 100 105 110

Ile Asn Tyr Ser His Cys Glu Pro Ile Leu Asp Asp Lys Gln Arg Lys  
 115 120 125

Tyr Asp Leu His Tyr Arg Ile Ala Leu Ile Ile Asn Tyr Leu Gly His  
 130 135 140

Cys Val Ser Val Val Ala Leu Val Ala Ala Phe Leu Leu Phe Leu Val  
 145 150 155 160

Leu Arg Ser Ile Arg Cys Leu Arg Asn Val Ile His Trp Asn Leu Ile  
 165 170 175

Thr Thr Phe Ile Leu Arg Asn Ile Thr Trp Phe Leu Leu Gln Leu Ile  
 180 185 190

Asp His Glu Val His Glu Gly Asn Glu Val Trp Cys Arg Cys Val Thr  
 195 200 205

Thr Ile Phe Asn Tyr Phe Val Val Thr Asn Phe Phe Trp Met Phe Val  
 210 215 220

Glu Gly Cys Tyr Leu His Thr Ala Ile Val Met Thr Tyr Ser Thr Glu  
 225 230 235 240

His Leu Arg Lys Trp Leu Phe Leu Phe Ile Gly Trp Cys Ile Pro Cys  
 245 250 255

Pro Ile Ile Val Ala Trp Ala Val Gly Lys Leu Tyr Tyr Glu Asn Glu  
 260 265 270

Gln Cys Trp Phe Gly Lys Glu Pro Gly Asp Leu Val Asp Tyr Ile Tyr  
 275 280 285

Gln Gly Pro Ile Ile Leu Val Leu Leu Ile Asn Phe Val Phe Leu Phe  
 290 295 300

Asn Ile Val Arg Ile Leu Met Thr Lys Leu Arg Ala Ser Thr Thr Ser  
 305 310 315 320

Glu Thr Ile Gln Tyr Arg Lys Ala Val Lys Ala Asn Leu Val Leu Leu  
 325 330 335

Pro Leu Leu Gly Ile Thr Tyr Met Leu Phe Phe Val Asn Pro Gly Glu  
 340 345 350

Asp Asp Leu Ser Gln Ile Val Phe Ile Tyr Phe Asn Ser Phe Leu Gln  
 355 360 365

Ser Phe Gln Gly Phe Phe Val Ser Val Phe Tyr Cys Phe Phe Asn Gly  
 370 375 380

Glu Val Arg Ser Ala Leu Arg Lys Arg Trp His Arg Trp Gln Asp His  
 385 390 395 400

His Ala Leu Arg Val Pro Val Ala Arg Ala Met Ser Ile Pro Thr Ser  
 405 410 415

Pro Thr Arg Ile Ser Phe His Ser Ile Lys Gln Thr Ala Ala Val  
 420 425 430

<210> 21  
 <211> 2273  
 <212> DNA  
 <213> Mus musculus

<220>  
 <221> CDS  
 <222> (32)..(1279)

<400> 21  
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 Met Gly Gln Arg Pro Gln Leu  
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cgg ctc gtg aag gcc ctt ctc ctt ctg ggg ctg aac ccc gtc tcc acc 100  
 Arg Leu Val Lys Ala Leu Leu Leu Leu Gly Leu Asn Pro Val Ser Thr

10	15	20	
tcc ctc cag gat cag cag tgt gag agc ctg tcc ctg gcc agc aat gtc Ser Leu Gln Asp Gln Gln Cys Glu Ser Leu Ser Leu Ala Ser Asn Val 25 30 35			148
tct ggc ctg cag tgc aat gcc tcc gtg gac ctc att ggc acc tgc tgg Ser Gly Leu Gln Cys Asn Ala Ser Val Asp Leu Ile Gly Thr Cys Trp 40 45 50 55			196
ccc agg agc cct gca ggg cag ttg gtg gtt cgg ccc tgc cct gcc ttt Pro Arg Ser Pro Ala Gly Gln Leu Val Val Arg Pro Cys Pro Ala Phe 60 65 70			244
ttc tac ggt gtc cgc tac aac acc aca aac aat ggc tac cgg gaa tgc Phe Tyr Gly Val Arg Tyr Asn Thr Thr Asn Asn Gly Tyr Arg Glu Cys 75 80 85			292
ctg gcc aac ggc agc tgg gca gcc cgt gtg aat tat tct gag tgc cag Leu Ala Asn Gly Ser Trp Ala Ala Arg Val Asn Tyr Ser Glu Cys Gln 90 95 100			340
gag att ctc aac gaa gag aag aag agc aaa gtg cac tac cac att gcc Glu Ile Leu Asn Glu Glu Lys Lys Ser Lys Val His Tyr His Ile Ala 105 110 115			388
gtc atc atc aac tac ctg ggc cac tgc atc tcc ctg gtg gcc ctc ctg Val Ile Ile Asn Tyr Leu Gly His Cys Ile Ser Leu Val Ala Leu Leu 120 125 130 135			436
gtg gcc ttt gtc ctc ttc ctg cgg ctc agg agc atc cgg tgc ctg agg Val Ala Phe Val Leu Phe Leu Arg Leu Arg Ser Ile Arg Cys Leu Arg 140 145 150			484
aac atc atc cac tgg aac ctc atc tcg gct ttc atc ctg cgc aac gcc Asn Ile Ile His Trp Asn Leu Ile Ser Ala Phe Ile Leu Arg Asn Ala 155 160 165			532
acg tgg ttt gtg gtc cag ctc acc gtg agc ccc gag gtc cac cag agc Thr Trp Phe Val Val Gln Leu Thr Val Ser Pro Glu Val His Gln Ser 170 175 180			580
aac gtg gcc tgg tgc agg ctg gtg aca gcc gcc tac aac tac ttc cac Asn Val Ala Trp Cys Arg Leu Val Thr Ala Ala Tyr Asn Tyr Phe His 185 190 195			628
gta acc aac ttc ttc tgg atg ttc ggt gag ggc tgc tac ctg cac aca Val Thr Asn Phe Phe Trp Met Phe Gly Glu Gly Cys Tyr Leu His Thr 200 205 210 215			676
gcc atc gta ctc acg tac tcc acc gac cgt ctg cgc aag tgg atg ttc Ala Ile Val Leu Thr Tyr Ser Thr Asp Arg Leu Arg Lys Trp Met Phe 220 225 230			724
gtc tgc atc ggc tgg ggt gtg cct ttc ccc atc att gtg gct tgg gcc Val Cys Ile Gly Trp Gly Val Pro Phe Pro Ile Ile Val Ala Trp Ala 235 240 245			772
att ggg aaa ctt tac tac gac aat gaa aag tgc tgg ttt ggc aaa cgt Ile Gly Lys Leu Tyr Tyr Asp Asn Glu Lys Cys Trp Phe Gly Lys Arg 250 255 260			820

cct gga gta tat act gac tac atc tac cag ggc ccc atg atc ctg gtc Pro Gly Val Tyr Thr Asp Tyr Ile Tyr Gln Gly Pro Met Ile Leu Val 265 270 275	868
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aag agg tgg cgg cga tgg cag gac aag cac tcc atc aga gcc cga gtg Lys Arg Trp Arg Arg Trp Gln Asp Lys His Ser Ile Arg Ala Arg Val 380 385 390	1204
gcc cgc gcc atg tcc atc ccc acc tcc ccc acc aga gtc agc ttc cac Ala Arg Ala Met Ser Ile Pro Thr Ser Pro Thr Arg Val Ser Phe His 395 400 405	1252
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gagccaccag gatttcatca gcaactgtggc actgccactg gaaagccctg ccttgctgct	1839
ttgctgccct gcaccttttag acatttacta ttctgcaggc caagccagct ttctgtcact	1899

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acctgtgaga agatgggggt cgggaagggg acttgagttg ccaggaacca gagtggggccc 2019  
agtctatgag gaaggagtgg cccctgggta cccaggccac tggcttcagt ggctggcctc 2079  
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<210> 22  
<211> 415  
<212> PRT  
<213> Mus musculus

<400> 22

Met Gly Gln Arg Pro Gln Leu Arg Leu Val Lys Ala Leu Leu Leu Leu  
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Gly Leu Asn Pro Val Ser Thr Ser Leu Gln Asp Gln Gln Cys Glu Ser  
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Leu Ser Leu Ala Ser Asn Val Ser Gly Leu Gln Cys Asn Ala Ser Val  
35 40 45

Asp Leu Ile Gly Thr Cys Trp Pro Arg Ser Pro Ala Gly Gln Leu Val  
50 55 60

Val Arg Pro Cys Pro Ala Phe Phe Tyr Gly Val Arg Tyr Asn Thr Thr  
65 70 75 80

Asn Asn Gly Tyr Arg Glu Cys Leu Ala Asn Gly Ser Trp Ala Ala Arg  
85 90 95

Val Asn Tyr Ser Glu Cys Gln Glu Ile Leu Asn Glu Glu Lys Lys Ser  
100 105 110

Lys Val His Tyr His Ile Ala Val Ile Ile Asn Tyr Leu Gly His Cys  
115 120 125

Ile Ser Leu Val Ala Leu Leu Val Ala Phe Val Leu Phe Leu Arg Leu  
130 135 140

Arg Ser Ile Arg Cys Leu Arg Asn Ile Ile His Trp Asn Leu Ile Ser  
145 150 155 160

Ala Phe Ile Leu Arg Asn Ala Thr Trp Phe Val Val Gln Leu Thr Val  
165 170 175

Ser Pro Glu Val His Gln Ser Asn Val Ala Trp Cys Arg Leu Val Thr  
180 185 190

Ala Ala Tyr Asn Tyr Phe His Val Thr Asn Phe Phe Trp Met Phe Gly  
195 200 205

Glu Gly Cys Tyr Leu His Thr Ala Ile Val Leu Thr Tyr Ser Thr Asp  
210 215 220

Arg Leu Arg Lys Trp Met Phe Val Cys Ile Gly Trp Gly Val Pro Phe  
225 230 235 240

Pro Ile Ile Val Ala Trp Ala Ile Gly Lys Leu Tyr Tyr Asp Asn Glu  
245 250 255

Lys Cys Trp Phe Gly Lys Arg Pro Gly Val Tyr Thr Asp Tyr Ile Tyr  
260 265 270

Gln Gly Pro Met Ile Leu Val Leu Leu Ile Asn Phe Ile Phe Leu Phe  
275 280 285

Asn Ile Val Arg Ile Leu Met Thr Lys Leu Arg Ala Ser Thr Thr Ser  
290 295 300

Glu Thr Ile Gln Tyr Arg Lys Ala Val Lys Ala Thr Leu Val Leu Leu  
305 310 315 320

Pro Leu Leu Gly Ile Thr Tyr Met Leu Phe Phe Val Asn Pro Gly Glu  
325 330 335

Asp Glu Val Ser Arg Val Val Phe Ile Tyr Phe Asn Ser Phe Leu Glu  
340 345 350

Ser Phe Gln Gly Phe Phe Val Ser Val Phe Tyr Cys Phe Leu Asn Ser  
355 360 365

Glu Val Arg Ser Ala Ile Arg Lys Arg Trp Arg Arg Trp Gln Asp Lys  
370 375 380

His Ser Ile Arg Ala Arg Val Ala Arg Ala Met Ser Ile Pro Thr Ser  
385 390 395 400

Pro Thr Arg Val Ser Phe His Ser Ile Lys Gln Ser Thr Ala Val  
405 410 415

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Met Gly Thr Pro Gly Ser Leu Pro Ser Ala Gln  
1 5 10  
ctt ctc ctc tgc ctg ttt tcc ctg ctt cca gtg ctc cag gtg gcc caa 159  
Leu Leu Leu Cys Leu Phe Ser Leu Leu Pro Val Leu Gln Val Ala Gln  
15 20 25  
cca ggc cag gca ccc cag gac cag ccc ctg tgg aca ctt ttg gag cag 207  
Pro Gly Gln Ala Pro Gln Asp Gln Pro Leu Trp Thr Leu Leu Glu Gln  
30 35 40  
tac tgc cac agg acc aca att ggg aat ttt tca ggt ccc tac acc tac 255  
Tyr Cys His Arg Thr Thr Ile Gly Asn Phe Ser Gly Pro Tyr Thr Tyr  
45 50 55  
tgc aac acg acc ttg gac cag atc ggg acc tgc tgg cca cag agc gca 303  
Cys Asn Thr Thr Leu Asp Gln Ile Gly Thr Cys Trp Pro Gln Ser Ala  
60 65 70 75  
ccc gga gcc cta gta gag aga ccg tgc ccc gag tac ttc aat ggc atc 351  
Pro Gly Ala Leu Val Glu Arg Pro Cys Pro Glu Tyr Phe Asn Gly Ile  
80 85 90  
aag tac aac acg acc cgg aat gcc tac aga gag tgc ctg gag aac ggg 399  
Lys Tyr Asn Thr Thr Arg Asn Ala Tyr Arg Glu Cys Leu Glu Asn Gly  
95 100 105  
acc tgg gcc tca agg gtc aac tac tca cac tgc gaa ccc att ttg gat 447  
Thr Trp Ala Ser Arg Val Asn Tyr Ser His Cys Glu Pro Ile Leu Asp  
110 115 120  
gac aag cag aga aag tat gac ctg cat tac cga atc gcc ctc att gtc 495  
Asp Lys Gln Arg Lys Tyr Asp Leu His Tyr Arg Ile Ala Leu Ile Val  
125 130 135  
aac tac ctg ggt cac tgt gtt tcc gtg gtg gcc ctg gtg gcc gct ttc 543  
Asn Tyr Leu Gly His Cys Val Ser Val Val Ala Leu Val Ala Ala Phe  
140 145 150 155  
ctg ctt ttc cta gtg ctg cgg agt atc cgc tgc ctg agg aat gtg atc 591  
Leu Leu Phe Leu Val Leu Arg Ser Ile Arg Cys Leu Arg Asn Val Ile  
160 165 170  
cac tgg aac ctc atc acc acc ttc att ctg aga aac atc gcg tgg ttc 639

His Trp Asn Leu Ile Thr Thr Phe Ile Leu Arg Asn Ile Ala Trp Phe	175	180	185	
ctg ctg caa ctc atc gac cac gaa gtg cac gag ggc aat gag gtc tgg				687
Leu Leu Gln Leu Ile Asp His Glu Val His Glu Gly Asn Glu Val Trp	190	195	200	
tgc cgc tgc atc acc acc atc ttc aac tat ttt gtg gtc acc aac ttc				735
Cys Arg Cys Ile Thr Thr Ile Phe Asn Tyr Phe Val Val Thr Asn Phe	205	210	215	
ttc tgg atg ttt gtg gag ggc tgc tac ctg cac acg gcc att gtc atg				783
Phe Trp Met Phe Val Glu Gly Cys Tyr Leu His Thr Ala Ile Val Met	220	225	230	
acg tac tcc aca gag cac ctg cgc aag tgg ctt ttc ctc ttc att gga				831
Thr Tyr Ser Thr Glu His Leu Arg Lys Trp Leu Phe Leu Phe Ile Gly	240	245	250	
tgg tgc att ccc tgc cct atc atc atc gcc tgg gca gtt ggc aaa ctc				879
Trp Cys Ile Pro Cys Pro Ile Ile Ile Ala Trp Ala Val Gly Lys Leu	255	260	265	
tac tat gag aat gag cag tgc tgg ttt ggc aag gaa gct ggt gat ttg				927
Tyr Tyr Glu Asn Glu Gln Cys Trp Phe Gly Lys Glu Ala Gly Asp Leu	270	275	280	
gtg gac tac atc tac cag ggc ccc gtc atg ctt gtg ctg ttg atc aat				975
Val Asp Tyr Ile Tyr Gln Gly Pro Val Met Leu Val Leu Leu Ile Asn	285	290	295	
ttt gta ttt ctg ttt aac atc gtc agg atc ctg atg acg aag tta cga				1023
Phe Val Phe Leu Phe Asn Ile Val Arg Ile Leu Met Thr Lys Leu Arg	300	305	310	
gca tcc acc acg tcc gag aca atc caa tac agg aag gca gtg aag gcc				1071
Ala Ser Thr Thr Ser Glu Thr Ile Gln Tyr Arg Lys Ala Val Lys Ala	320	325	330	
acg ctg gtc ctc ctc ccc ctg ttg ggc atc acc tac atg ctc ttc ttt				1119
Thr Leu Val Leu Leu Pro Leu Leu Gly Ile Thr Tyr Met Leu Phe Phe	335	340	345	
gtc aat cct ggc gag gac gac ctg tcc cag att gtg ttc atc tac ttc				1167
Val Asn Pro Gly Glu Asp Asp Leu Ser Gln Ile Val Phe Ile Tyr Phe	350	355	360	
aac tct ttc ctg cag tcc ttc cag ggt ttc ttt gtg tcc gtt ttc tac				1215
Asn Ser Phe Leu Gln Ser Phe Gln Gly Phe Phe Val Ser Val Phe Tyr	365	370	375	
tgc ttc ttc aat gga gag gtg cgc gcg gcc ctg aga aag cgg tgg cac				1263
Cys Phe Phe Asn Gly Glu Val Arg Ala Ala Leu Arg Lys Arg Trp His	380	385	390	
cgc tgg cag gac cac cac gcc ctc cgg gtg cct gtg gcc cgg gcc atg				1311
Arg Trp Gln Asp His His Ala Leu Arg Val Pro Val Ala Arg Ala Met	400	405	410	
tcc atc cct acg tcg ccc acc agg atc agc ttc cac agc atc aag cag				1359
Ser Ile Pro Thr Ser Pro Thr Arg Ile Ser Phe His Ser Ile Lys Gln				

415 420 425 1374

aca gct gct gtg tga  
 Thr Ala Ala Val  
 430

<210> 24  
 <211> 431  
 <212> PRT  
 <213> Mus musculus

<400> 24

Met Gly Thr Pro Gly Ser Leu Pro Ser Ala Gln Leu Leu Leu Cys Leu  
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Phe Ser Leu Leu Pro Val Leu Gln Val Ala Gln Pro Gly Gln Ala Pro  
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Gln Asp Gln Pro Leu Trp Thr Leu Leu Glu Gln Tyr Cys His Arg Thr  
 35 40 45

Thr Ile Gly Asn Phe Ser Gly Pro Tyr Thr Tyr Cys Asn Thr Thr Leu  
 50 55 60

Asp Gln Ile Gly Thr Cys Trp Pro Gln Ser Ala Pro Gly Ala Leu Val  
 65 70 75 80

Glu Arg Pro Cys Pro Glu Tyr Phe Asn Gly Ile Lys Tyr Asn Thr Thr  
 85 90 95

Arg Asn Ala Tyr Arg Glu Cys Leu Glu Asn Gly Thr Trp Ala Ser Arg  
 100 105 110

Val Asn Tyr Ser His Cys Glu Pro Ile Leu Asp Asp Lys Gln Arg Lys  
 115 120 125

Tyr Asp Leu His Tyr Arg Ile Ala Leu Ile Val Asn Tyr Leu Gly His  
 130 135 140

Cys Val Ser Val Val Ala Leu Val Ala Ala Phe Leu Leu Phe Leu Val  
 145 150 155 160

Leu Arg Ser Ile Arg Cys Leu Arg Asn Val Ile His Trp Asn Leu Ile  
 165 170 175

Thr Thr Phe Ile Leu Arg Asn Ile Ala Trp Phe Leu Leu Gln Leu Ile  
 180 185 190

Asp His Glu Val His Glu Gly Asn Glu Val Trp Cys Arg Cys Ile Thr  
195 200 205

Thr Ile Phe Asn Tyr Phe Val Val Thr Asn Phe Phe Trp Met Phe Val  
210 215 220

Glu Gly Cys Tyr Leu His Thr Ala Ile Val Met Thr Tyr Ser Thr Glu  
225 230 235 240

His Leu Arg Lys Trp Leu Phe Leu Phe Ile Gly Trp Cys Ile Pro Cys  
245 250 255

Pro Ile Ile Ile Ala Trp Ala Val Gly Lys Leu Tyr Tyr Glu Asn Glu  
260 265 270

Gln Cys Trp Phe Gly Lys Glu Ala Gly Asp Leu Val Asp Tyr Ile Tyr  
275 280 285

Gln Gly Pro Val Met Leu Val Leu Leu Ile Asn Phe Val Phe Leu Phe  
290 295 300

Asn Ile Val Arg Ile Leu Met Thr Lys Leu Arg Ala Ser Thr Thr Ser  
305 310 315 320

Glu Thr Ile Gln Tyr Arg Lys Ala Val Lys Ala Thr Leu Val Leu Leu  
325 330 335

Pro Leu Leu Gly Ile Thr Tyr Met Leu Phe Phe Val Asn Pro Gly Glu  
340 345 350

Asp Asp Leu Ser Gln Ile Val Phe Ile Tyr Phe Asn Ser Phe Leu Gln  
355 360 365

Ser Phe Gln Gly Phe Phe Val Ser Val Phe Tyr Cys Phe Phe Asn Gly  
370 375 380

Glu Val Arg Ala Ala Leu Arg Lys Arg Trp His Arg Trp Gln Asp His  
385 390 395 400

His Ala Leu Arg Val Pro Val Ala Arg Ala Met Ser Ile Pro Thr Ser  
405 410 415

Pro Thr Arg Ile Ser Phe His Ser Ile Lys Gln Thr Ala Ala Val  
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 tctgctgtcc c atg ggg acc cca ggc tct ctt ccc agt gca cag ctt ctc 170  
                   Met Gly Thr Pro Gly Ser Leu Pro Ser Ala Gln Leu Leu  
                   1                  5                  10  
 ctc tgc ctg ttt tcc ctg ctt cca gtg ctc cag gtg gcc caa cca ggc 218  
 Leu Cys Leu Phe Ser Leu Leu Pro Val Leu Gln Val Ala Gln Pro Gly  
           15                  20                  25  
 cag gca ccc cag gac cag ccc ctg tgg aca ctt ttg gag cag tac tgc 266  
 Gln Ala Pro Gln Asp Gln Pro Leu Trp Thr Leu Leu Glu Gln Tyr Cys  
   30                  35                  40                  45  
 cac agg acc aca att ggg aat ttt tca ggt ccc tac acc tac tgc aac 314  
 His Arg Thr Thr Ile Gly Asn Phe Ser Gly Pro Tyr Thr Tyr Cys Asn  
                   50                  55                  60  
 acg acc ttg gac cag atc ggg acc tgc tgg cca cag agc gca ccc gga 362  
 Thr Thr Leu Asp Gln Ile Gly Thr Cys Trp Pro Gln Ser Ala Pro Gly  
                   65                  70                  75  
 gcc cta gta gag aga ccg tgc ccc gag tac ttc aat ggc atc aag tac 410  
 Ala Leu Val Glu Arg Pro Cys Pro Glu Tyr Phe Asn Gly Ile Lys Tyr  
           80                  85                  90  
 aac acg acc cgg aat gcc tac aga gag tgc ctg gag aac ggg acc tgg 458  
 Asn Thr Thr Arg Asn Ala Tyr Arg Glu Cys Leu Glu Asn Gly Thr Trp  
   95                  100                  105  
 gcc tca agg gtc aac tac tca cac tgc gaa ccc att ttg gat gac aag 506  
 Ala Ser Arg Val Asn Tyr Ser His Cys Glu Pro Ile Leu Asp Asp Lys  
  110                  115                  120                  125  
 aga aag tat gac ctg cat tac cga atc gcc ctc att gtc aac tac ctg 554  
 Arg Lys Tyr Asp Leu His Tyr Arg Ile Ala Leu Ile Val Asn Tyr Leu  
                   130                  135                  140  
 ggt cac tgt gtt tcc gtg gtg gcc ctg gtg gcc gct ttc ctg ctt ttc 602  
 Gly His Cys Val Ser Val Val Ala Leu Val Ala Ala Phe Leu Leu Phe  
           145                  150                  155  
 cta gtg ctg cgg agt atc cgc tgc ctg agg aat gtg atc cac tgg aac 650  
 Leu Val Leu Arg Ser Ile Arg Cys Leu Arg Asn Val Ile His Trp Asn  
           160                  165                  170  
 ctc atc acc acc ttc att ctg aga aac atc gcg tgg ttc ctg ctg caa 698  
 Leu Ile Thr Thr Phe Ile Leu Arg Asn Ile Ala Trp Phe Leu Leu Gln  
  175                  180                  185

ctc atc gac cac gaa gtg cac gag ggc aat gag gtc tgg tgc cgc tgc Leu Ile Asp His Glu Val His Glu Gly Asn Glu Val Trp Cys Arg Cys 190 195 200 205	746
atc acc acc atc ttc aac tat ttt gtg gtc acc aac ttc ttc tgg atg Ile Thr Thr Ile Phe Asn Tyr Phe Val Val Thr Asn Phe Phe Trp Met 210 215 220	794
ttt gtg gag ggc tgc tac ctg cac acg gcc att gtc atg acg tac tcc Phe Val Glu Gly Cys Tyr Leu His Thr Ala Ile Val Met Thr Tyr Ser 225 230 235	842
aca gag cac ctg cgc aag tgg ctt ttc ctc ttc att gga tgg tgc att Thr Glu His Leu Arg Lys Trp Leu Phe Leu Phe Ile Gly Trp Cys Ile 240 245 250	890
ccc tgc cct atc atc atc gcc tgg gca gtt ggc aaa ctc tac tat gag Pro Cys Pro Ile Ile Ile Ala Trp Ala Val Gly Lys Leu Tyr Tyr Glu 255 260 265	938
aat gag cag tgc tgg ttt ggc aag gaa gct ggt gat ttg gtg gac tac Asn Glu Gln Cys Trp Phe Gly Lys Glu Ala Gly Asp Leu Val Asp Tyr 270 275 280 285	986
atc tac cag ggc ccc gtc atg ctt gtg ctg ttg atc aat ttt gta ttt Ile Tyr Gln Gly Pro Val Met Leu Val Leu Leu Ile Asn Phe Val Phe 290 295 300	1034
ctg ttt aac atc gtc agg atc ctg atg acg aag tta cga gca tcc acc Leu Phe Asn Ile Val Arg Ile Leu Met Thr Lys Leu Arg Ala Ser Thr 305 310 315	1082
acg tcc gag aca atc caa tac agg aag gca gtg aag gcc acg ctg gtc Thr Ser Glu Thr Ile Gln Tyr Arg Lys Ala Val Lys Ala Thr Leu Val 320 325 330	1130
ctc ctc ccc ctg ttg ggc atc acc tac atg ctc ttc ttt gtc aat cct Leu Leu Pro Leu Leu Gly Ile Thr Tyr Met Leu Phe Phe Val Asn Pro 335 340 345	1178
ggc gag gac gac ctg tcc cag att gtg ttc atc tac ttc aac tct ttc Gly Glu Asp Asp Leu Ser Gln Ile Val Phe Ile Tyr Phe Asn Ser Phe 350 355 360 365	1226
ctg cag tcc ttc cag ggt ttc ttt gtg tcc gtt ttc tac tgc ttc ttc Leu Gln Ser Phe Gln Gly Phe Phe Val Ser Val Phe Tyr Cys Phe Phe 370 375 380	1274
aat gga gag gtg cgc gcg gcc ctg aga aac ggg tgg cac cgc tgg cag Asn Gly Glu Val Arg Ala Ala Leu Arg Asn Gly Trp His Arg Trp Gln 385 390 395	1322
gac cac cac gcc ctc cgg gtg cct gtg gcc cgg gcc atg tcc atc cct Asp His His Ala Leu Arg Val Pro Val Ala Arg Ala Met Ser Ile Pro 400 405 410	1370
acg tcg ccc acc agg atc agc ttc cac agc atc aag cag aca gct gct Thr Ser Pro Thr Arg Ile Ser Phe His Ser Ile Lys Gln Thr Ala Ala 415 420 425	1418

gtg tga ccctctgtca ccgtctgccc ggcagtccac cactgaggca gcttctccat 1474  
Val  
430

cctttacagc cttcccctgg gtcctccttg ctaccctgac ccacagggta caaggtacag 1534  
gagaagggag gagaacgaac actcccgccct ggaaggaaag gaaagctatg acatgggggg 1594  
gctctgaagg accagggccc agtgcagcca gccacacatc tccaagcacg aaggagcagg 1654  
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gcctcttttg tggggtcctc actgcagcac catttacatc tgaagaaact gaggctcaga 1774  
gcaggcaggg acctggccaa gtcacatagc tacttgcccc acccacagca cccacagttg 1834  
gctctgctcc ttgctttcca tctccacacg tgagggcgcc ctctaaaggt gagggagaca 1894  
agaatgacct tatctggctt catcccagaa gctgtcgagc agagatgacc agccctttac 1954  
caaggtagcc ttcttcttcc ccagtctgtt tcccatgtgt ctccaggaga atgctggctt 2014  
tcagtcggcc atccctcctg ggagtcccca attcagctctg ggctcagctt ggggacctag 2074  
accacgggaa gtgagttaga tggaaagtca cactctccac agtgccagac agaagggaga 2134  
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aggacatatc catgcccctc ttcttactgg ctaggcccaa gcaggccttc ctgtggagtc 2374  
tttaggttca aaggggccga atcattcctg tcaccccaaa ggggtggcatc tgcaccaccc 2434  
ccagcgtaga ccccacctgt gccagggact aatattcttg aattgggagg gagaggaggc 2494  
aaggcccttc aggtccgaa agcaagaaga cacagtttga tttcaggctt ctcttccatt 2554  
cctctgtccc tggagcagaa gaggggtgtt ggggcaagcc aacagacttg aaaaggcccc 2614  
cgg 2617

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<212> PRT  
<213> Mus musculus

<400> 26

Met Gly Thr Pro Gly Ser Leu Pro Ser Ala Gln Leu Leu Leu Cys Leu  
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Phe Ser Leu Leu Pro Val Leu Gln Val Ala Gln Pro Gly Gln Ala Pro  
20 25 30

Gln Asp Gln Pro Leu Trp Thr Leu Leu Glu Gln Tyr Cys His Arg Thr

35 40 45

Thr Ile Gly Asn Phe Ser Gly Pro Tyr Thr Tyr Cys Asn Thr Thr Leu  
50 55 60

Asp Gln Ile Gly Thr Cys Trp Pro Gln Ser Ala Pro Gly Ala Leu Val  
65 70 75 80

Glu Arg Pro Cys Pro Glu Tyr Phe Asn Gly Ile Lys Tyr Asn Thr Thr  
85 90 95

Arg Asn Ala Tyr Arg Glu Cys Leu Glu Asn Gly Thr Trp Ala Ser Arg  
100 105 110

Val Asn Tyr Ser His Cys Glu Pro Ile Leu Asp Asp Lys Arg Lys Tyr  
115 120 125

Asp Leu His Tyr Arg Ile Ala Leu Ile Val Asn Tyr Leu Gly His Cys  
130 135 140

Val Ser Val Val Ala Leu Val Ala Ala Phe Leu Leu Phe Leu Val Leu  
145 150 155 160

Arg Ser Ile Arg Cys Leu Arg Asn Val Ile His Trp Asn Leu Ile Thr  
165 170 175

Thr Phe Ile Leu Arg Asn Ile Ala Trp Phe Leu Leu Gln Leu Ile Asp  
180 185 190

His Glu Val His Glu Gly Asn Glu Val Trp Cys Arg Cys Ile Thr Thr  
195 200 205

Ile Phe Asn Tyr Phe Val Val Thr Asn Phe Phe Trp Met Phe Val Glu  
210 215 220

Gly Cys Tyr Leu His Thr Ala Ile Val Met Thr Tyr Ser Thr Glu His  
225 230 235 240

Leu Arg Lys Trp Leu Phe Leu Phe Ile Gly Trp Cys Ile Pro Cys Pro  
245 250 255

Ile Ile Ile Ala Trp Ala Val Gly Lys Leu Tyr Tyr Glu Asn Glu Gln  
260 265 270

Cys Trp Phe Gly Lys Glu Ala Gly Asp Leu Val Asp Tyr Ile Tyr Gln  
275 280 285

Gly Pro Val Met Leu Val Leu Leu Ile Asn Phe Val Phe Leu Phe Asn  
 290 295 300

Ile Val Arg Ile Leu Met Thr Lys Leu Arg Ala Ser Thr Thr Ser Glu  
 305 310 315 320

Thr Ile Gln Tyr Arg Lys Ala Val Lys Ala Thr Leu Val Leu Leu Pro  
 325 330 335

Leu Leu Gly Ile Thr Tyr Met Leu Phe Phe Val Asn Pro Gly Glu Asp  
 340 345 350

Asp Leu Ser Gln Ile Val Phe Ile Tyr Phe Asn Ser Phe Leu Gln Ser  
 355 360 365

Phe Gln Gly Phe Phe Val Ser Val Phe Tyr Cys Phe Phe Asn Gly Glu  
 370 375 380

Val Arg Ala Ala Leu Arg Asn Gly Trp His Arg Trp Gln Asp His His  
 385 390 395 400

Ala Leu Arg Val Pro Val Ala Arg Ala Met Ser Ile Pro Thr Ser Pro  
 405 410 415

Thr Arg Ile Ser Phe His Ser Ile Lys Gln Thr Ala Ala Val  
 420 425 430

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 <212> DNA  
 <213> Ovis aries

<220>  
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 Met Gly Arg Arg Pro Gln Leu Arg Leu Val Lys Ala Leu Leu Leu Leu  
 1 5 10 15

ggg ctg aac tcc atc tcc gcc tcc ctc cag gac cag cat tgc gag agc 96  
 Gly Leu Asn Ser Ile Ser Ala Ser Leu Gln Asp Gln His Cys Glu Ser  
 20 25 30

ttg tcc ctg gcc agc aac gtc tct gga ctg cag tgc aac gct tcc gtg 144  
 Leu Ser Leu Ala Ser Asn Val Ser Gly Leu Gln Cys Asn Ala Ser Val  
 35 40 45

gac ctt aat ggc acc tgc tgg ccc cag agt cct gca ggg cag ttg gtg 192

Asp	Leu	Asn	Gly	Thr	Cys	Trp	Pro	Gln	Ser	Pro	Ala	Gly	Gln	Leu	Val		
50						55					60						
ggt	cga	ccc	tgc	ctc	gta	ttt	ttc	tat	ggt	gtc	cgc	tac	aat	acc	aca	240	
Val	Arg	Pro	Cys	Leu	Val	Phe	Phe	Tyr	Gly	Val	Arg	Tyr	Asn	Thr	Thr	80	
65					70					75							
agc	aat	ggc	tac	cgg	gtg	tgc	ctg	gcc	aat	ggc	acg	tgg	gca	gcc	cgc	288	
Ser	Asn	Gly	Tyr	Arg	Val	Cys	Leu	Ala	Asn	Gly	Thr	Trp	Ala	Ala	Arg		
				85					90					95			
gtg	aat	cac	tcc	gag	tgc	caa	gag	atc	ctc	agc	gaa	gga	gag	aag	agc	336	
Val	Asn	His	Ser	Glu	Cys	Gln	Glu	Ile	Leu	Ser	Glu	Gly	Glu	Lys	Ser		
			100					105					110				
aag	gcg	cac	tac	cac	atc	gcc	gtc	atc	atc	aac	tac	ctg	ggc	cac	tgc	384	
Lys	Ala	His	Tyr	His	Ile	Ala	Val	Ile	Ile	Asn	Tyr	Leu	Gly	His	Cys		
		115					120					125					
atc	tcc	ctg	gcg	gcc	ctc	ctg	gtg	gcc	ttt	gtc	ctc	ttt	ctg	cgg	ctc	432	
Ile	Ser	Leu	Ala	Ala	Leu	Leu	Val	Ala	Phe	Val	Leu	Phe	Leu	Arg	Leu		
	130					135					140						
agg	agc	atc	cgg	tgc	gtg	aga	aac	atc	atc	cac	tgg	aac	ctc	atc	tca	480	
Arg	Ser	Ile	Arg	Cys	Val	Arg	Asn	Ile	Ile	His	Trp	Asn	Leu	Ile	Ser		
145					150					155					160		
gcc	ttc	atc	ctg	cgc	aat	gcc	acg	tgg	ttc	gtg	gtc	cag	ctc	acc	atg	528	
Ala	Phe	Ile	Leu	Arg	Asn	Ala	Thr	Trp	Phe	Val	Val	Gln	Leu	Thr	Met		
				165				170						175			
agc	ccc	gaa	gtc	cat	cag	agc	aac	gtg	ggc	tgg	tgc	agg	ctg	gtg	aca	576	
Ser	Pro	Glu	Val	His	Gln	Ser	Asn	Val	Gly	Trp	Cys	Arg	Leu	Val	Thr		
			180					185					190				
gcc	gcc	tac	aac	tac	ttc	cac	gtg	acc	aac	ttc	ttc	tgg	atg	ttc	ggc	624	
Ala	Ala	Tyr	Asn	Tyr	Phe	His	Val	Thr	Asn	Phe	Phe	Trp	Met	Phe	Gly		
		195					200					205					
gag	ggc	tgc	tac	ctg	cac	acg	gct	gtc	gtg	ctc	aca	tac	tcc	acg	gac	672	
Glu	Gly	Cys	Tyr	Leu	His	Thr	Ala	Val	Val	Leu	Thr	Tyr	Ser	Thr	Asp		
	210					215					220						
cgg	ctg	cgc	aaa	tgg	atg	ttt	atc	tgc	atc	ggc	tgg	ggc	gtg	ccc	ttc	720	
Arg	Leu	Arg	Lys	Trp	Met	Phe	Ile	Cys	Ile	Gly	Trp	Gly	Val	Pro	Phe		
225					230					235					240		
ccc	atc	att	gtg	gcc	tgg	gcc	att	gga	aag	ttg	tac	tac	gac	aat	gag	768	
Pro	Ile	Ile	Val	Ala	Trp	Ala	Ile	Gly	Lys	Leu	Tyr	Tyr	Asp	Asn	Glu		
				245				250						255			
aag	tgc	tgg	ttt	ggc	aaa	agg	cct	ggg	gtg	tac	act	gat	tac	atc	tac	816	
Lys	Cys	Trp	Phe	Gly	Lys	Arg	Pro	Gly	Val	Tyr	Thr	Asp	Tyr	Ile	Tyr		
			260					265					270				
cag	ggc	ccg	atg	atc	ttg	gtc	ctg	ctg	atc	aat	ttc	atc	ttc	ctt	ttc	864	
Gln	Gly	Pro	Met	Ile	Leu	Val	Leu	Leu	Ile	Asn	Phe	Ile	Phe	Leu	Phe		
		275					280					285					
aac	atc	gtt	cgc	atc	ctc	atg	acc	aaa	ctc	cgg	gca	tcc	acc	acc	tct	912	
Asn	Ile	Val	Arg	Ile	Leu	Met	Thr	Lys	Leu	Arg	Ala	Ser	Thr	Thr	Ser		

290	295	300	
gag acc att cag tac agg aag gct gtg aag gcc act ctg gtg ctg ctc			960
Glu Thr Ile Gln Tyr Arg Lys Ala Val Lys Ala Thr Leu Val Leu Leu			
305	310	315	320
ccc ctc ctg ggc atc acg tac atg ctg ttc ttc gtg aac ccc ggg gag			1008
Pro Leu Leu Gly Ile Thr Tyr Met Leu Phe Phe Val Asn Pro Gly Glu			
	325	330	335
gac gag gtc tcc cgg gtc gtc ttc atc tac ttc aac tcc ttc ctg gaa			1056
Asp Glu Val Ser Arg Val Val Phe Ile Tyr Phe Asn Ser Phe Leu Glu			
	340	345	350
tct ttc cag ggc ttc ttc gtg tct gtg ttc tac tgc ttc ctc aac agc			1104
Ser Phe Gln Gly Phe Phe Val Ser Val Phe Tyr Cys Phe Leu Asn Ser			
	355	360	365
gag gtc cgc tct gcc atc cgg aag agg tgg cac cgc tgg cag gac aag			1152
Glu Val Arg Ser Ala Ile Arg Lys Arg Trp His Arg Trp Gln Asp Lys			
	370	375	380
cac tca atc cgt gcc cgt gtg gct cgc gcc atg tcc atc ccc acc tcc			1200
His Ser Ile Arg Ala Arg Val Ala Arg Ala Met Ser Ile Pro Thr Ser			
	385	390	400
ccc acc cgt gtc agc ttt cac agc atc aag cag tcc aca gca gtg tga			1248
Pro Thr Arg Val Ser Phe His Ser Ile Lys Gln Ser Thr Ala Val			
	405	410	415

<210> 28  
 <211> 415  
 <212> PRT  
 <213> Ovis aries

<400> 28

Met Gly Arg Arg Pro Gln Leu Arg Leu Val Lys Ala Leu Leu Leu Leu  
1 5 10 15

Gly Leu Asn Ser Ile Ser Ala Ser Leu Gln Asp Gln His Cys Glu Ser  
20 25 30

Leu Ser Leu Ala Ser Asn Val Ser Gly Leu Gln Cys Asn Ala Ser Val  
35 40 45

Asp Leu Asn Gly Thr Cys Trp Pro Gln Ser Pro Ala Gly Gln Leu Val  
50 55 60

Val Arg Pro Cys Leu Val Phe Phe Tyr Gly Val Arg Tyr Asn Thr Thr  
65 70 75 80

Ser Asn Gly Tyr Arg Val Cys Leu Ala Asn Gly Thr Trp Ala Ala Arg  
85 90 95

Val Asn His Ser Glu Cys Gln Glu Ile Leu Ser Glu Gly Glu Lys Ser  
 100 105 110

Lys Ala His Tyr His Ile Ala Val Ile Ile Asn Tyr Leu Gly His Cys  
 115 120 125

Ile Ser Leu Ala Ala Leu Leu Val Ala Phe Val Leu Phe Leu Arg Leu  
 130 135 140

Arg Ser Ile Arg Cys Val Arg Asn Ile Ile His Trp Asn Leu Ile Ser  
 145 150 155 160

Ala Phe Ile Leu Arg Asn Ala Thr Trp Phe Val Val Gln Leu Thr Met  
 165 170 175

Ser Pro Glu Val His Gln Ser Asn Val Gly Trp Cys Arg Leu Val Thr  
 180 185 190

Ala Ala Tyr Asn Tyr Phe His Val Thr Asn Phe Phe Trp Met Phe Gly  
 195 200 205

Glu Gly Cys Tyr Leu His Thr Ala Val Val Leu Thr Tyr Ser Thr Asp  
 210 215 220

Arg Leu Arg Lys Trp Met Phe Ile Cys Ile Gly Trp Gly Val Pro Phe  
 225 230 235 240

Pro Ile Ile Val Ala Trp Ala Ile Gly Lys Leu Tyr Tyr Asp Asn Glu  
 245 250 255

Lys Cys Trp Phe Gly Lys Arg Pro Gly Val Tyr Thr Asp Tyr Ile Tyr  
 260 265 270

Gln Gly Pro Met Ile Leu Val Leu Leu Ile Asn Phe Ile Phe Leu Phe  
 275 280 285

Asn Ile Val Arg Ile Leu Met Thr Lys Leu Arg Ala Ser Thr Thr Ser  
 290 295 300

Glu Thr Ile Gln Tyr Arg Lys Ala Val Lys Ala Thr Leu Val Leu Leu  
 305 310 315 320

Pro Leu Leu Gly Ile Thr Tyr Met Leu Phe Phe Val Asn Pro Gly Glu  
 325 330 335

Asp Glu Val Ser Arg Val Val Phe Ile Tyr Phe Asn Ser Phe Leu Glu  
 340 345 350

Ser Phe Gln Gly Phe Phe Val Ser Val Phe Tyr Cys Phe Leu Asn Ser  
 355 360 365

Glu Val Arg Ser Ala Ile Arg Lys Arg Trp His Arg Trp Gln Asp Lys  
 370 375 380

His Ser Ile Arg Ala Arg Val Ala Arg Ala Met Ser Ile Pro Thr Ser  
 385 390 395 400

Pro Thr Arg Val Ser Phe His Ser Ile Lys Gln Ser Thr Ala Val  
 405 410 415

<210> 29  
 <211> 1248  
 <212> DNA  
 <213> *Xenopus laevis*

<220>  
 <221> CDS  
 <222> (1)..(1248)

<400> 29  
 atg ctg ttg gcc aaa act cca tgt cta cta ctg gtg cag gtg atc gct 48  
 Met Leu Leu Ala Lys Thr Pro Cys Leu Leu Leu Val Gln Val Ile Ala  
 1 5 10 15  
 gct gga atc agt ttt gcc ctc acc tct ctc cag gac caa tgt gaa acc 96  
 Ala Gly Ile Ser Phe Ala Leu Thr Ser Leu Gln Asp Gln Cys Glu Thr  
 20 25 30  
 ctg cag cac aat tct aac ttc aca ggt ctt gcc tgc aac gct tcc att 144  
 Leu Gln His Asn Ser Asn Phe Thr Gly Leu Ala Cys Asn Ala Ser Ile  
 35 40 45  
 gat atg atc ggc act tgc tgg ccc agt act gca gct gga cag atg gtg 192  
 Asp Met Ile Gly Thr Cys Trp Pro Ser Thr Ala Ala Gly Gln Met Val  
 50 55 60  
 gcc aga ccc tgc ccc gag tac ttc cat ggg gtg caa tac aac aca aca 240  
 Ala Arg Pro Cys Pro Glu Tyr Phe His Gly Val Gln Tyr Asn Thr Thr  
 65 70 75 80  
 ggg aat gtg tac aga gaa tgt cac ctg aac ggc agc tgg gct ggg aga 288  
 Gly Asn Val Tyr Arg Glu Cys His Leu Asn Gly Ser Trp Ala Gly Arg  
 85 90 95  
 gga gac tac gct caa tgc cag gag att cta aag caa gag aag aaa acc 336  
 Gly Asp Tyr Ala Gln Cys Gln Glu Ile Leu Lys Gln Glu Lys Lys Thr  
 100 105 110  
 aaa gtt cat tat cac ata gcc atc gtg att aac ttc ctg ggt cac tcc 384  
 Lys Val His Tyr His Ile Ala Ile Val Ile Asn Phe Leu Gly His Ser  
 115 120 125

att tcc ctt tgt gct ctc ctg gtg gct ttt atc ctg ttc ttg agg ttg Ile Ser Leu Cys Ala Leu Leu Val Ala Phe Ile Leu Phe Leu Arg Leu 130 135 140	432
agg agc atc cgg tgc cta cgt aat atc atc cac tgg aac ctg atc acg Arg Ser Ile Arg Cys Leu Arg Asn Ile Ile His Trp Asn Leu Ile Thr 145 150 155 160	480
gct ttt att ctg cgt aat gta acc tgg ttt gtg atg cag ctc act ctc Ala Phe Ile Leu Arg Asn Val Thr Trp Phe Val Met Gln Leu Thr Leu 165 170 175	528
agc cat gaa gcc cac gac agc aat gtg gtt tgg tgc cgc ctg gtc acc Ser His Glu Ala His Asp Ser Asn Val Val Trp Cys Arg Leu Val Thr 180 185 190	576
atc gct cac aat tat ttt tat gtt acc aac ttc ttc tgg atg ttt ggg Ile Ala His Asn Tyr Phe Tyr Val Thr Asn Phe Phe Trp Met Phe Gly 195 200 205	624
gag ggc tgt tac ctg cac acg gcc att gtt cta acc tac tca act gac Glu Gly Cys Tyr Leu His Thr Ala Ile Val Leu Thr Tyr Ser Thr Asp 210 215 220	672
aaa ctg cgc aaa tgg atg ttc atc tgt att ggc tgg tgt atc ccc ttt Lys Leu Arg Lys Trp Met Phe Ile Cys Ile Gly Trp Cys Ile Pro Phe 225 230 235 240	720
ccc atc att gtg gct tgg gcc att ggc aaa ctt tac tac gac aat gaa Pro Ile Ile Val Ala Trp Ala Ile Gly Lys Leu Tyr Tyr Asp Asn Glu 245 250 255	768
aag tgc tgg ttt ggg aag aaa gcg gga gtc tac aca gat ttt atc tac Lys Cys Trp Phe Gly Lys Lys Ala Gly Val Tyr Thr Asp Phe Ile Tyr 260 265 270	816
caa gga cct gtc atc ctt gtg ctg ctg atc aac ttc ata ttt tta ttc Gln Gly Pro Val Ile Leu Val Leu Leu Ile Asn Phe Ile Phe Leu Phe 275 280 285	864
aac att gta cgg att ctg atg aca aag ctc aga gct tcc acc act tca Asn Ile Val Arg Ile Leu Met Thr Lys Leu Arg Ala Ser Thr Thr Ser 290 295 300	912
gag acc ata cag tac agg aaa gct gtt aaa gcc acc ctg gtg ctc ctg Glu Thr Ile Gln Tyr Arg Lys Ala Val Lys Ala Thr Leu Val Leu Leu 305 310 315 320	960
cct ttg ctt ggg atc acc tac atg ctt ttc ttt gtg acg ccc ggg gag Pro Leu Leu Gly Ile Thr Tyr Met Leu Phe Phe Val Thr Pro Gly Glu 325 330 335	1008
gat gaa atc tca cgt atc gtc ttt atc tat ttc aac tct ttc ctg cag Asp Glu Ile Ser Arg Ile Val Phe Ile Tyr Phe Asn Ser Phe Leu Gln 340 345 350	1056
tcc ttt cag ggt ttc ttt gtt tca gtt ttc tac tgc ttc ctt aat agt Ser Phe Gln Gly Phe Phe Val Ser Val Phe Tyr Cys Phe Leu Asn Ser 355 360 365	1104

gag gtg cgc tca gca gtc cgg aag cga tgg cac cga tgg cag gac aag	1152
Glu Val Arg Ser Ala Val Arg Lys Arg Trp His Arg Trp Gln Asp Lys	
370 375 380	
cat tca atc cgt gct cgc gtg gcc cgt gcc atg tcc att ccc aca tca	1200
His Ser Ile Arg Ala Arg Val Ala Arg Ala Met Ser Ile Pro Thr Ser	
385 390 395 400	
ccc act cgg att agt ttc cac agc atc aag caa tct tct gcc att tga	1248
Pro Thr Arg Ile Ser Phe His Ser Ile Lys Gln Ser Ser Ala Ile	
405 410 415	
<210> 30	
<211> 415	
<212> PRT	
<213> Xenopus laevis	
<400> 30	
Met Leu Leu Ala Lys Thr Pro Cys Leu Leu Leu Val Gln Val Ile Ala	
1 5 10 15	
Ala Gly Ile Ser Phe Ala Leu Thr Ser Leu Gln Asp Gln Cys Glu Thr	
20 25 30	
Leu Gln His Asn Ser Asn Phe Thr Gly Leu Ala Cys Asn Ala Ser Ile	
35 40 45	
Asp Met Ile Gly Thr Cys Trp Pro Ser Thr Ala Ala Gly Gln Met Val	
50 55 60	
Ala Arg Pro Cys Pro Glu Tyr Phe His Gly Val Gln Tyr Asn Thr Thr	
65 70 75 80	
Gly Asn Val Tyr Arg Glu Cys His Leu Asn Gly Ser Trp Ala Gly Arg	
85 90 95	
Gly Asp Tyr Ala Gln Cys Gln Glu Ile Leu Lys Gln Glu Lys Lys Thr	
100 105 110	
Lys Val His Tyr His Ile Ala Ile Val Ile Asn Phe Leu Gly His Ser	
115 120 125	
Ile Ser Leu Cys Ala Leu Leu Val Ala Phe Ile Leu Phe Leu Arg Leu	
130 135 140	
Arg Ser Ile Arg Cys Leu Arg Asn Ile Ile His Trp Asn Leu Ile Thr	
145 150 155 160	
Ala Phe Ile Leu Arg Asn Val Thr Trp Phe Val Met Gln Leu Thr Leu	

175

Pro Thr Arg Ile Ser Phe His Ser Ile Lys Gln Ser Ser Ala Ile  
405 410 415

<210> 31  
 <211> 1242  
 <212> DNA  
 <213> *Xenopus laevis*

<220>  
 <221> CDS  
 <222> (1)..(1242)

<400> 31	
atg gac agc acc atc ttt gag att atc att gat gaa ttt gat gcc aac	48
Met Asp Ser Thr Ile Phe Glu Ile Ile Ile Asp Glu Phe Asp Ala Asn	
1 5 10 15	
tgc agc ctt ttg gat gct ttt cag gac agt ttt ttg cac tct gag tcc	96
Cys Ser Leu Leu Asp Ala Phe Gln Asp Ser Phe Leu His Ser Glu Ser	
20 25 30	
tcc tct ttc ttt ggc ttt gaa ggt ccc tat tgt agc gct acc att gac	144
Ser Ser Phe Phe Gly Phe Glu Gly Pro Tyr Cys Ser Ala Thr Ile Asp	
35 40 45	
cag att ggc acg tgc tgg ccc agg agc cta gcc ggg gaa ctt gtg gaa	192
Gln Ile Gly Thr Cys Trp Pro Arg Ser Leu Ala Gly Glu Leu Val Glu	
50 55 60	
aga ccc tgc ccg gat tcc ttc aat ggg atc aga tac aac aca act aga	240
Arg Pro Cys Pro Asp Ser Phe Asn Gly Ile Arg Tyr Asn Thr Thr Arg	
65 70 75 80	
aac gtc tac aga gaa tgc ttt gag aat gga acc tgg gcg tcc tgg atg	288
Asn Val Tyr Arg Glu Cys Phe Glu Asn Gly Thr Trp Ala Ser Trp Met	
85 90 95	
aat tac tct cag tgt gtg ccc att ctg gat aat aag agg aag tac gcc	336
Asn Tyr Ser Gln Cys Val Pro Ile Leu Asp Asn Lys Arg Lys Tyr Ala	
100 105 110	
ctt cat tac aag att gct ctc atc ata aac tac ctg ggg cac tgc atc	384
Leu His Tyr Lys Ile Ala Leu Ile Ile Asn Tyr Leu Gly His Cys Ile	
115 120 125	
tcc atc ttg gct ctc gtt atc gct ttc ttg ctc ttt ctg tgt ttg agg	432
Ser Ile Leu Ala Leu Val Ile Ala Phe Leu Leu Phe Leu Cys Leu Arg	
130 135 140	
agt ata aga tgc ctt cgg aac att atc cac tgg aat tta atc act act	480
Ser Ile Arg Cys Leu Arg Asn Ile Ile His Trp Asn Leu Ile Thr Thr	
145 150 155 160	
ttc atc ctg agg aac atc atg tgg ttc ctg ctg cag atg att gac cat	528
Phe Ile Leu Arg Asn Ile Met Trp Phe Leu Leu Gln Met Ile Asp His	
165 170 175	
aac att cat gaa agc aac gag gtc tgg tgt cgg tgt atc aca act att	576
Asn Ile His Glu Ser Asn Glu Val Trp Cys Arg Cys Ile Thr Thr Ile	
180 185 190	
tac aat tac ttt gtg gtg acc aac ttc ttc tgg atg ttt gtg gaa gga	624

Tyr	Asn	Tyr	Phe	Val	Val	Thr	Asn	Phe	Phe	Trp	Met	Phe	Val	Glu	Gly		
	195						200					205					
tgt	tac	cta	cac	aca	gct	ata	gtg	atg	aca	tac	tca	acg	gac	aaa	ctt		672
Cys	Tyr	Leu	His	Thr	Ala	Ile	Val	Met	Thr	Tyr	Ser	Thr	Asp	Lys	Leu		
	210					215					220						
agg	aaa	tgg	gtg	ttc	ctc	ttc	ata	gga	tgg	tgt	att	cca	tct	ccg	atc		720
Arg	Lys	Trp	Val	Phe	Leu	Phe	Ile	Gly	Trp	Cys	Ile	Pro	Ser	Pro	Ile		
	225				230					235					240		
att	gtc	acc	tgg	gcc	atc	tgc	aag	ctt	ttc	tat	gaa	aat	gaa	cag	tgt		768
Ile	Val	Thr	Trp	Ala	Ile	Cys	Lys	Leu	Phe	Tyr	Glu	Asn	Glu	Gln	Cys		
				245					250					255			
tgg	att	ggg	aag	gag	ccc	ggg	aaa	tac	att	gat	tac	att	tac	cag	ggc		816
Trp	Ile	Gly	Lys	Glu	Pro	Gly	Lys	Tyr	Ile	Asp	Tyr	Ile	Tyr	Gln	Gly		
			260					265					270				
cgg	gtg	att	ctc	gta	ctt	ctg	ata	aat	ttt	gtg	ttc	tta	ttc	aac	att		864
Arg	Val	Ile	Leu	Val	Leu	Leu	Ile	Asn	Phe	Val	Phe	Leu	Phe	Asn	Ile		
		275					280					285					
gta	aga	att	ttg	atg	aca	aaa	ctg	aga	gct	tca	act	aca	tct	gaa	acg		912
Val	Arg	Ile	Leu	Met	Thr	Lys	Leu	Arg	Ala	Ser	Thr	Thr	Ser	Glu	Thr		
	290					295					300						
ata	cag	tac	agg	aag	gct	gtg	aag	gca	acg	tta	gtc	ctt	ctc	cct	ctt		960
Ile	Gln	Tyr	Arg	Lys	Ala	Val	Lys	Ala	Thr	Leu	Val	Leu	Leu	Pro	Leu		
	305				310					315					320		
ctg	gga	atc	acc	tac	atg	ctc	ttc	ttc	gtc	aac	cct	gga	gag	gat	gac		1008
Leu	Gly	Ile	Thr	Tyr	Met	Leu	Phe	Phe	Val	Asn	Pro	Gly	Glu	Asp	Asp		
				325					330					335			
gtt	tct	cag	atc	gtt	ttt	att	tac	ttc	aac	tcg	ttt	ctt	cag	tcc	ttt		1056
Val	Ser	Gln	Ile	Val	Phe	Ile	Tyr	Phe	Asn	Ser	Phe	Leu	Gln	Ser	Phe		
			340					345					350				
cag	ggt	ttc	ttt	gtg	tca	gta	ttt	tac	tgc	ttc	ctt	aat	ggg	gag	gtc		1104
Gln	Gly	Phe	Phe	Val	Ser	Val	Phe	Tyr	Cys	Phe	Leu	Asn	Gly	Glu	Val		
		355					360					365					
cgg	tcg	gct	gca	agg	aaa	aga	tgg	cac	cgc	tgg	caa	gac	cac	cat	tct		1152
Arg	Ser	Ala	Ala	Arg	Lys	Arg	Trp	His	Arg	Trp	Gln	Asp	His	His	Ser		
	370					375					380						
ctg	cgg	gtt	cgg	gta	gcc	aga	gcc	atg	tcc	ata	cca	aca	tca	ccg	acc		1200
Leu	Arg	Val	Arg	Val	Ala	Arg	Ala	Met	Ser	Ile	Pro	Thr	Ser	Pro	Thr		
	385				390					395					400		
aga	atc	agc	ttt	cac	agt	ata	aag	caa	acg	gca	gcc	gtc	tga				1242
Arg	Ile	Ser	Phe	His	Ser	Ile	Lys	Gln	Thr	Ala	Ala	Val					
				405					410								
<210>	32																
<211>	413																
<212>	PRT																
<213>	Xenopus laevis																

<400> 32

Met Asp Ser Thr Ile Phe Glu Ile Ile Ile Asp Glu Phe Asp Ala Asn  
1 5 10 15

Cys Ser Leu Leu Asp Ala Phe Gln Asp Ser Phe Leu His Ser Glu Ser  
20 25 30

Ser Ser Phe Phe Gly Phe Glu Gly Pro Tyr Cys Ser Ala Thr Ile Asp  
35 40 45

Gln Ile Gly Thr Cys Trp Pro Arg Ser Leu Ala Gly Glu Leu Val Glu  
50 55 60

Arg Pro Cys Pro Asp Ser Phe Asn Gly Ile Arg Tyr Asn Thr Thr Arg  
65 70 75 80

Asn Val Tyr Arg Glu Cys Phe Glu Asn Gly Thr Trp Ala Ser Trp Met  
85 90 95

Asn Tyr Ser Gln Cys Val Pro Ile Leu Asp Asn Lys Arg Lys Tyr Ala  
100 105 110

Leu His Tyr Lys Ile Ala Leu Ile Ile Asn Tyr Leu Gly His Cys Ile  
115 120 125

Ser Ile Leu Ala Leu Val Ile Ala Phe Leu Leu Phe Leu Cys Leu Arg  
130 135 140

Ser Ile Arg Cys Leu Arg Asn Ile Ile His Trp Asn Leu Ile Thr Thr  
145 150 155 160

Phe Ile Leu Arg Asn Ile Met Trp Phe Leu Leu Gln Met Ile Asp His  
165 170 175

Asn Ile His Glu Ser Asn Glu Val Trp Cys Arg Cys Ile Thr Thr Ile  
180 185 190

Tyr Asn Tyr Phe Val Val Thr Asn Phe Phe Trp Met Phe Val Glu Gly  
195 200 205

Cys Tyr Leu His Thr Ala Ile Val Met Thr Tyr Ser Thr Asp Lys Leu  
210 215 220

Arg Lys Trp Val Phe Leu Phe Ile Gly Trp Cys Ile Pro Ser Pro Ile  
225 230 235 240

Ile Val Thr Trp Ala Ile Cys Lys Leu Phe Tyr Glu Asn Glu Gln Cys  
 245 250 255  
 Trp Ile Gly Lys Glu Pro Gly Lys Tyr Ile Asp Tyr Ile Tyr Gln Gly  
 260 265 270  
 Arg Val Ile Leu Val Leu Leu Ile Asn Phe Val Phe Leu Phe Asn Ile  
 275 280 285  
 Val Arg Ile Leu Met Thr Lys Leu Arg Ala Ser Thr Thr Ser Glu Thr  
 290 295 300  
 Ile Gln Tyr Arg Lys Ala Val Lys Ala Thr Leu Val Leu Leu Pro Leu  
 305 310 315 320  
 Leu Gly Ile Thr Tyr Met Leu Phe Phe Val Asn Pro Gly Glu Asp Asp  
 325 330 335  
 Val Ser Gln Ile Val Phe Ile Tyr Phe Asn Ser Phe Leu Gln Ser Phe  
 340 345 350  
 Gln Gly Phe Phe Val Ser Val Phe Tyr Cys Phe Leu Asn Gly Glu Val  
 355 360 365  
 Arg Ser Ala Ala Arg Lys Arg Trp His Arg Trp Gln Asp His His Ser  
 370 375 380  
 Leu Arg Val Arg Val Ala Arg Ala Met Ser Ile Pro Thr Ser Pro Thr  
 385 390 395 400  
 Arg Ile Ser Phe His Ser Ile Lys Gln Thr Ala Ala Val  
 405 410

<210> 33  
 <211> 1338  
 <212> DNA  
 <213> Ameiurus nebulosus

<220>  
 <221> CDS  
 <222> (1)..(1338)

<400> 33

atg cat ttc ctt cta cgt cct cag gtg ttt tct atc tgg atc aca cta  
 Met His Phe Leu Leu Arg Pro Gln Val Phe Ser Ile Trp Ile Thr Leu  
 1 5 10 15

48

ttc tct ggg gcc aca gct gag ctc aca tgc gac act ctg ctc ctg ctc  
 Phe Ser Gly Ala Thr Ala Glu Leu Thr Cys Asp Thr Leu Leu Leu Leu

96

20	25	30	
tcc acc aac cgc aca gct cgc aca tta ata cta tgg aac cag acg tcg Ser Thr Asn Arg Thr Ala Arg Thr Leu Ile Leu Trp Asn Gln Thr Ser 35 40 45			144
agc tca agt aat gcc aca ggt aca agc tca agt aat gcc aca ggt aca Ser Ser Ser Asn Ala Thr Gly Thr Ser Ser Ser Asn Ala Thr Gly Thr 50 55 60			192
agc tca agc aat gcc aca ggt ttg ttc tgt aat ata tct ata gat ggc Ser Ser Ser Asn Ala Thr Gly Leu Phe Cys Asn Ile Ser Ile Asp Gly 65 70 75 80			240
atc ggg acg tgt tgg ccc agg agc aac gca ggg gaa ata gta tca cgt Ile Gly Thr Cys Trp Pro Arg Ser Asn Ala Gly Glu Ile Val Ser Arg 85 90 95			288
cca tgt cct gag acc ttc ttg ggt gtc cgc tac aac acc acc aat aac Pro Cys Pro Glu Thr Phe Leu Gly Val Arg Tyr Asn Thr Thr Asn Asn 100 105 110			336
gtc tac aga gaa tgc ctc gcc aat gga acg tgg gcg aag aag ggg aat Val Tyr Arg Glu Cys Leu Ala Asn Gly Thr Trp Ala Lys Lys Gly Asn 115 120 125			384
tat tct cag tgt cag gaa att ctc aat gaa gag aaa aag agc aag ctg Tyr Ser Gln Cys Gln Glu Ile Leu Asn Glu Glu Lys Lys Ser Lys Leu 130 135 140			432
cac tac cac att gca gtg att ata aac tac ctg ggc cac tgc atc tct His Tyr His Ile Ala Val Ile Ile Asn Tyr Leu Gly His Cys Ile Ser 145 150 155 160			480
ctc gga gcc ctg ctg gtt gcc ttc att ctc ttt atg agg ctg agg atg Leu Gly Ala Leu Leu Val Ala Phe Ile Leu Phe Met Arg Leu Arg Met 165 170 175			528
atc cgc tgc ctc agg aac atc att cac tgg aat ctg att atg gct ttc Ile Arg Cys Leu Arg Asn Ile Ile His Trp Asn Leu Ile Met Ala Phe 180 185 190			576
atc ctg cgc aat gct aca tgg ttc gta gtg cag ctg acc atg aac cca Ile Leu Arg Asn Ala Thr Trp Phe Val Val Gln Leu Thr Met Asn Pro 195 200 205			624
gag gtg cat gag agc aat gtg atc tgg tgc agg ctg gtt aca gca gcg Glu Val His Glu Ser Asn Val Ile Trp Cys Arg Leu Val Thr Ala Ala 210 215 220			672
tat aat tac ttt cat gtg acc aac ttc ttc tgg atg ttt ggt gag ggc Tyr Asn Tyr Phe His Val Thr Asn Phe Phe Trp Met Phe Gly Glu Gly 225 230 235 240			720
tgc tat ctg cac acg gcc atc gtg ctg act tac tcc act gat aag ctc Cys Tyr Leu His Thr Ala Ile Val Leu Thr Tyr Ser Thr Asp Lys Leu 245 250 255			768
agg aag tgg ctg ttc atc tgt atc ggc tgg tgt att ccc ttt cct atc Arg Lys Trp Leu Phe Ile Cys Ile Gly Trp Cys Ile Pro Phe Pro Ile 260 265 270			816

atc gtt gca tgg gcc att ggt aag ctg tat tac gac aat gaa aag tgc	864
Ile Val Ala Trp Ala Ile Gly Lys Leu Tyr Tyr Asp Asn Glu Lys Cys	
275 280 285	
tgg ttt gga aaa cga gct ggt gtt tat act gac tac atc tat cag ggc	912
Trp Phe Gly Lys Arg Ala Gly Val Tyr Thr Asp Tyr Ile Tyr Gln Gly	
290 295 300	
ccc atg atc ctt gtt ctt ctg atc aac ttt att ttc ctt ttc aac atc	960
Pro Met Ile Leu Val Leu Leu Ile Asn Phe Ile Phe Leu Phe Asn Ile	
305 310 315 320	
gtg agg atc ctg atg aca aag cta aga gcc tcc acc aca tca gag acg	1008
Val Arg Ile Leu Met Thr Lys Leu Arg Ala Ser Thr Thr Ser Glu Thr	
325 330 335	
att cag tac agg aaa gct gtg aag gcc act ctg gtc ctg ctg cct ctc	1056
Ile Gln Tyr Arg Lys Ala Val Lys Ala Thr Leu Val Leu Leu Pro Leu	
340 345 350	
ctc ggg atc acc tac atg ctt ttc ttt gtt aac cct gga gag gac gag	1104
Leu Gly Ile Thr Tyr Met Leu Phe Phe Val Asn Pro Gly Glu Asp Glu	
355 360 365	
atc tcc caa atc gtc ttc atc tat ttc aat tct ttc ctc gag tcc ttt	1152
Ile Ser Gln Ile Val Phe Ile Tyr Phe Asn Ser Phe Leu Glu Ser Phe	
370 375 380	
caa ggt ttc ttc gtg tct gtg ttt tat tgc ttc ctg aac agt gaa gtc	1200
Gln Gly Phe Phe Val Ser Val Phe Tyr Cys Phe Leu Asn Ser Glu Val	
385 390 395 400	
cgt tcg gct gtt cgg aag cgc tgg cac cgc cgg cag gac aag cac tca	1248
Arg Ser Ala Val Arg Lys Arg Trp His Arg Arg Gln Asp Lys His Ser	
405 410 415	
atc cgg gca cgg gtg gca cgg gcc atg tcc att ccc acc tcg cct act	1296
Ile Arg Ala Arg Val Ala Arg Ala Met Ser Ile Pro Thr Ser Pro Thr	
420 425 430	
cgg gtc agc ttc cac agc atc aag caa tcc tca gca gtg tga	1338
Arg Val Ser Phe His Ser Ile Lys Gln Ser Ser Ala Val	
435 440 445	

<210> 34  
 <211> 445  
 <212> PRT  
 <213> Ameiurus nebulosus

<400> 34

Met His Phe Leu Leu Arg Pro Gln Val Phe Ser Ile Trp Ile Thr Leu
1 5 10 15

Phe Ser Gly Ala Thr Ala Glu Leu Thr Cys Asp Thr Leu Leu Leu Leu
20 25 30

Ser Thr Asn Arg Thr Ala Arg Thr Leu Ile Leu Trp Asn Gln Thr Ser  
 35 40 45

Ser Ser Ser Asn Ala Thr Gly Thr Ser Ser Ser Asn Ala Thr Gly Thr  
 50 55 60

Ser Ser Ser Asn Ala Thr Gly Leu Phe Cys Asn Ile Ser Ile Asp Gly  
 65 70 75 80

Ile Gly Thr Cys Trp Pro Arg Ser Asn Ala Gly Glu Ile Val Ser Arg  
 85 90 95

Pro Cys Pro Glu Thr Phe Leu Gly Val Arg Tyr Asn Thr Thr Asn Asn  
 100 105 110

Val Tyr Arg Glu Cys Leu Ala Asn Gly Thr Trp Ala Lys Lys Gly Asn  
 115 120 125

Tyr Ser Gln Cys Gln Glu Ile Leu Asn Glu Glu Lys Lys Ser Lys Leu  
 130 135 140

His Tyr His Ile Ala Val Ile Ile Asn Tyr Leu Gly His Cys Ile Ser  
 145 150 155 160

Leu Gly Ala Leu Leu Val Ala Phe Ile Leu Phe Met Arg Leu Arg Met  
 165 170 175

Ile Arg Cys Leu Arg Asn Ile Ile His Trp Asn Leu Ile Met Ala Phe  
 180 185 190

Ile Leu Arg Asn Ala Thr Trp Phe Val Val Gln Leu Thr Met Asn Pro  
 195 200 205

Glu Val His Glu Ser Asn Val Ile Trp Cys Arg Leu Val Thr Ala Ala  
 210 215 220

Tyr Asn Tyr Phe His Val Thr Asn Phe Phe Trp Met Phe Gly Glu Gly  
 225 230 235 240

Cys Tyr Leu His Thr Ala Ile Val Leu Thr Tyr Ser Thr Asp Lys Leu  
 245 250 255

Arg Lys Trp Leu Phe Ile Cys Ile Gly Trp Cys Ile Pro Phe Pro Ile  
 260 265 270

Ile Val Ala Trp Ala Ile Gly Lys Leu Tyr Tyr Asp Asn Glu Lys Cys

275	280	285	
Trp Phe Gly Lys Arg Ala Gly Val Tyr Thr Asp Tyr Ile Tyr Gln Gly			
290	295	300	
Pro Met Ile Leu Val Leu Leu Ile Asn Phe Ile Phe Leu Phe Asn Ile			
305	310	315	320
Val Arg Ile Leu Met Thr Lys Leu Arg Ala Ser Thr Thr Ser Glu Thr			
	325	330	335
Ile Gln Tyr Arg Lys Ala Val Lys Ala Thr Leu Val Leu Leu Pro Leu			
	340	345	350
Leu Gly Ile Thr Tyr Met Leu Phe Phe Val Asn Pro Gly Glu Asp Glu			
	355	360	365
Ile Ser Gln Ile Val Phe Ile Tyr Phe Asn Ser Phe Leu Glu Ser Phe			
	370	375	380
Gln Gly Phe Phe Val Ser Val Phe Tyr Cys Phe Leu Asn Ser Glu Val			
385	390	395	400
Arg Ser Ala Val Arg Lys Arg Trp His Arg Arg Gln Asp Lys His Ser			
	405	410	415
Ile Arg Ala Arg Val Ala Arg Ala Met Ser Ile Pro Thr Ser Pro Thr			
	420	425	430
Arg Val Ser Phe His Ser Ile Lys Gln Ser Ser Ala Val			
	435	440	445
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cagaaatatg gagatggaga ctgctttaca gtcactcggg tcaaacagga tgttaagctg			60
aactgattaa taatcctgcc agctgatcaa ctggaaaggg a atg tgg atc tgc cta			116
		Met Trp Ile Cys Leu	
		1 5	
atg cta aag gtc ttg tct atc ttg tct ttt gtg gtt gtg aag gtg tca			164
Met Leu Lys Val Leu Ser Ile Leu Ser Phe Val Val Val Lys Val Ser			

10					15					20						
gct	gat	ctt	acc	tgc	gat	gcc	gtg	cta	atg	ctg	gct	tct	gga	aac	cac	212
Ala	Asp	Leu	Thr	Cys	Asp	Ala	Val	Leu	Met	Leu	Ala	Ser	Gly	Asn	His	
			25					30					35			
aca	ttg	tac	cat	ctg	gat	gcc	gct	aat	cac	tct	gac	act	aat	aac	tcg	260
Thr	Leu	Tyr	His	Leu	Asp	Ala	Ala	Asn	His	Ser	Asp	Thr	Asn	Asn	Ser	
		40					45					50				
ggt	gtg	ttt	tgc	agc	aca	gtt	atc	gat	ggc	atc	ggc	acc	tgc	tgg	ccg	308
Gly	Val	Phe	Cys	Ser	Thr	Val	Ile	Asp	Gly	Ile	Gly	Thr	Cys	Trp	Pro	
	55					60					65					
cgc	agc	gtg	gcc	ggg	gag	atg	gtg	tcg	cgt	ccg	tgt	ccg	gaa	ttc	ctc	356
Arg	Ser	Val	Ala	Gly	Glu	Met	Val	Ser	Arg	Pro	Cys	Pro	Glu	Phe	Leu	
70				75					80						85	
tac	gga	gtc	cga	tac	aac	acc	acc	aat	aaa	atc	ttc	cgg	aaa	tgt	ctt	404
Tyr	Gly	Val	Arg	Tyr	Asn	Thr	Thr	Asn	Lys	Ile	Phe	Arg	Lys	Cys	Leu	
				90				95						100		
gct	aat	gga	acc	tgg	gcg	ccc	aaa	agc	aac	tac	tct	cag	tgc	aag	gct	452
Ala	Asn	Gly	Thr	Trp	Ala	Pro	Lys	Ser	Asn	Tyr	Ser	Gln	Cys	Lys	Ala	
			105					110					115			
att	ctc	aat	gta	cag	agg	aag	agc	aag	ctg	cat	tat	cga	atc	gct	gtc	500
Ile	Leu	Asn	Val	Gln	Arg	Lys	Ser	Lys	Leu	His	Tyr	Arg	Ile	Ala	Val	
		120					125					130				
atc	att	aac	tac	ctg	ggt	cac	tgc	ttg	tca	ctg	ttc	act	ctt	ctt	atc	548
Ile	Ile	Asn	Tyr	Leu	Gly	His	Cys	Leu	Ser	Leu	Phe	Thr	Leu	Leu	Ile	
	135					140					145					
gcc	ttc	ata	atc	ttc	tta	cga	ctc	agg	agt	att	cgc	tgt	tta	agg	aac	596
Ala	Phe	Ile	Ile	Phe	Leu	Arg	Leu	Arg	Ser	Ile	Arg	Cys	Leu	Arg	Asn	
150					155					160					165	
atc	atc	cac	tgg	aat	cta	acc	tct	gcc	ttc	atc	ctg	aga	aat	gcg	acg	644
Ile	Ile	His	Trp	Asn	Leu	Thr	Ser	Ala	Phe	Ile	Leu	Arg	Asn	Ala	Thr	
				170				175						180		
tgg	ttc	atc	gtt	cag	ctc	acc	atg	aac	cct	gat	gta	cac	gag	agc	aac	692
Trp	Phe	Ile	Val	Gln	Leu	Thr	Met	Asn	Pro	Asp	Val	His	Glu	Ser	Asn	
			185					190					195			
gtg	cca	tgg	tgc	cgt	tta	gtg	acg	acg	gca	tat	aac	tac	ttc	cac	atg	740
Val	Pro	Trp	Cys	Arg	Leu	Val	Thr	Thr	Ala	Tyr	Asn	Tyr	Phe	His	Met	
		200					205					210				
gcc	aat	ttt	ttc	tgg	atg	ttc	ggc	gaa	ggc	tgt	tat	ctt	cac	aca	gcc	788
Ala	Asn	Phe	Phe	Trp	Met	Phe	Gly	Glu	Gly	Cys	Tyr	Leu	His	Thr	Ala	
	215					220					225					
atc	gtg	ctc	acc	tac	tcc	act	gac	aaa	ctc	aag	aaa	tgg	atg	ttc	atc	836
Ile	Val	Leu	Thr	Tyr	Ser	Thr	Asp	Lys	Leu	Lys	Lys	Trp	Met	Phe	Ile	
230					235					240					245	
tgc	atc	gga	tgg	tgt	att	cct	tcg	cct	att	atc	gtc	gcc	tgg	gcc	atc	884
Cys	Ile	Gly	Trp	Cys	Ile	Pro	Ser	Pro	Ile	Ile	Val	Ala	Trp	Ala	Ile	
				250					255					260		

gga aag ctg tac tac gac aac gag aag tgt tgg ttt ggg aag aga gca	932
Gly Lys Leu Tyr Tyr Asp Asn Glu Lys Cys Trp Phe Gly Lys Arg Ala	
265 270 275	
ggc ata tac aca gac tac atc tac cag ggc ccc atg atc ctg gta ctt	980
Gly Ile Tyr Thr Asp Tyr Ile Tyr Gln Gly Pro Met Ile Leu Val Leu	
280 285 290	
atg atc aat ttc gtg ttc ctc ttc aac ata gta agg atc ctc atg acc	1028
Met Ile Asn Phe Val Phe Leu Phe Asn Ile Val Arg Ile Leu Met Thr	
295 300 305	
aaa ctc cgg gcc tcc acc aca tcc gaa acc atc cag tac agg aag gcg	1076
Lys Leu Arg Ala Ser Thr Thr Ser Glu Thr Ile Gln Tyr Arg Lys Ala	
310 315 320 325	
gtg aag gcc acg ctc gtg tta ctg cct ctg ctc ggg atc acg tac atg	1124
Val Lys Ala Thr Leu Val Leu Leu Pro Leu Leu Gly Ile Thr Tyr Met	
330 335 340	
ctg ttc ttc gta aac cca gga gag gac gaa atc tcg cag atc gtc ttc	1172
Leu Phe Phe Val Asn Pro Gly Glu Asp Glu Ile Ser Gln Ile Val Phe	
345 350 355	
atc tac ttc aat tcc ttt ctg cag tcc ttt cag ggc ttc ttt gtg tcc	1220
Ile Tyr Phe Asn Ser Phe Leu Gln Ser Phe Gln Gly Phe Phe Val Ser	
360 365 370	
gtg ttc tac tgt ttt cta aac agc gag gtc cgc tcg gct gtt cgg aag	1268
Val Phe Tyr Cys Phe Leu Asn Ser Glu Val Arg Ser Ala Val Arg Lys	
375 380 385	
cac tgg cac cgc tgg cag gac cac cat tcc atc cgc gca cga gtt gcg	1316
His Trp His Arg Trp Gln Asp His His Ser Ile Arg Ala Arg Val Ala	
390 395 400 405	
aga gcg atg tcc att ccc acc tca cct tcg cgc ctc agc ttc cac agc	1364
Arg Ala Met Ser Ile Pro Thr Ser Pro Ser Arg Leu Ser Phe His Ser	
410 415 420	
atc aaa cag tcc acc tct gtc tga tacagggacg cataacattg aaaaagaaag	1418
Ile Lys Gln Ser Thr Ser Val	
425	
aggcaggcac tctatcagtg agga	1442

<210> 36  
 <211> 428  
 <212> PRT  
 <213> Ameiurus nebulosus

<400> 36

Met Trp Ile Cys Leu Met Leu Lys Val Leu Ser Ile Leu Ser Phe Val
1 5 10 15

Val Val Lys Val Ser Ala Asp Leu Thr Cys Asp Ala Val Leu Met Leu
20 25 30

Ala Ser Gly Asn His Thr Leu Tyr His Leu Asp Ala Ala Asn His Ser  
 35 40 45

Asp Thr Asn Asn Ser Gly Val Phe Cys Ser Thr Val Ile Asp Gly Ile  
 50 55 60

Gly Thr Cys Trp Pro Arg Ser Val Ala Gly Glu Met Val Ser Arg Pro  
 65 70 75 80

Cys Pro Glu Phe Leu Tyr Gly Val Arg Tyr Asn Thr Thr Asn Lys Ile  
 85 90 95

Phe Arg Lys Cys Leu Ala Asn Gly Thr Trp Ala Pro Lys Ser Asn Tyr  
 100 105 110

Ser Gln Cys Lys Ala Ile Leu Asn Val Gln Arg Lys Ser Lys Leu His  
 115 120 125

Tyr Arg Ile Ala Val Ile Ile Asn Tyr Leu Gly His Cys Leu Ser Leu  
 130 135 140

Phe Thr Leu Leu Ile Ala Phe Ile Ile Phe Leu Arg Leu Arg Ser Ile  
 145 150 155 160

Arg Cys Leu Arg Asn Ile Ile His Trp Asn Leu Thr Ser Ala Phe Ile  
 165 170 175

Leu Arg Asn Ala Thr Trp Phe Ile Val Gln Leu Thr Met Asn Pro Asp  
 180 185 190

Val His Glu Ser Asn Val Pro Trp Cys Arg Leu Val Thr Thr Ala Tyr  
 195 200 205

Asn Tyr Phe His Met Ala Asn Phe Phe Trp Met Phe Gly Glu Gly Cys  
 210 215 220

Tyr Leu His Thr Ala Ile Val Leu Thr Tyr Ser Thr Asp Lys Leu Lys  
 225 230 235 240

Lys Trp Met Phe Ile Cys Ile Gly Trp Cys Ile Pro Ser Pro Ile Ile  
 245 250 255

Val Ala Trp Ala Ile Gly Lys Leu Tyr Tyr Asp Asn Glu Lys Cys Trp  
 260 265 270

Phe Gly Lys Arg Ala Gly Ile Tyr Thr Asp Tyr Ile Tyr Gln Gly Pro  
 275 280 285

Met Ile Leu Val Leu Met Ile Asn Phe Val Phe Leu Phe Asn Ile Val  
 290 295 300

Arg Ile Leu Met Thr Lys Leu Arg Ala Ser Thr Thr Ser Glu Thr Ile  
 305 310 315 320

Gln Tyr Arg Lys Ala Val Lys Ala Thr Leu Val Leu Leu Pro Leu Leu  
 325 330 335

Gly Ile Thr Tyr Met Leu Phe Phe Val Asn Pro Gly Glu Asp Glu Ile  
 340 345 350

Ser Gln Ile Val Phe Ile Tyr Phe Asn Ser Phe Leu Gln Ser Phe Gln  
 355 360 365

Gly Phe Phe Val Ser Val Phe Tyr Cys Phe Leu Asn Ser Glu Val Arg  
 370 375 380

Ser Ala Val Arg Lys His Trp His Arg Trp Gln Asp His His Ser Ile  
 385 390 395 400

Arg Ala Arg Val Ala Arg Ala Met Ser Ile Pro Thr Ser Pro Ser Arg  
 405 410 415

Leu Ser Phe His Ser Ile Lys Gln Ser Thr Ser Val  
 420 425

<210> 37  
 <211> 1218  
 <212> DNA  
 <213> Ameiurus nebulosus

<220>  
 <221> CDS  
 <222> (1)..(1218)

<400> 37	
atg gag gtc agt ctg ctg gag ctg ctc agt gtg gag gtg aac tgc agc	48
Met Glu Val Ser Leu Leu Glu Leu Leu Ser Val Glu Val Asn Cys Ser	
1 5 10 15	
ctc gcg gac gcg ttt gga gac cct gcg tac gga aac gca tca gac gct	96
Leu Ala Asp Ala Phe Gly Asp Pro Ala Tyr Gly Asn Ala Ser Asp Ala	
20 25 30	
ctg tac tgc aac gcc acg gcg gat gag atc ggc acg tgc tgg ccg agg	144
Leu Tyr Cys Asn Ala Thr Ala Asp Glu Ile Gly Thr Cys Trp Pro Arg	

35					40					45						
agc	ggc	gcg	ggg	aga	gtg	gtg	gcg	cgg	ccg	tgc	ccc	gac	ttc	atc	aac	192
Ser	Gly	Ala	Gly	Arg	Val	Val	Ala	Arg	Pro	Cys	Pro	Asp	Phe	Ile	Asn	
	50					55					60					
ggg	gtc	aag	tac	aac	agc	acc	agg	agc	gcg	tat	aga	gaa	tgc	ctg	gag	240
Gly	Val	Lys	Tyr	Asn	Ser	Thr	Arg	Ser	Ala	Tyr	Arg	Glu	Cys	Leu	Glu	
65					70					75					80	
aac	ggc	aca	tgg	gct	ttc	aag	atc	aac	tac	tcc	agc	tgc	gag	ccc	att	288
Asn	Gly	Thr	Trp	Ala	Phe	Lys	Ile	Asn	Tyr	Ser	Ser	Cys	Glu	Pro	Ile	
				85					90					95		
tta	gag	gaa	aag	agg	aag	tac	ccg	gtc	cac	tac	aag	atc	gct	ctc	atc	336
Leu	Glu	Glu	Lys	Arg	Lys	Tyr	Pro	Val	His	Tyr	Lys	Ile	Ala	Leu	Ile	
			100					105					110			
atc	aac	tat	ttg	gga	cac	tgc	ata	tct	gta	ggt	gct	ctc	gtc	atc	gcc	384
Ile	Asn	Tyr	Leu	Gly	His	Cys	Ile	Ser	Val	Gly	Ala	Leu	Val	Ile	Ala	
		115					120					125				
ttc	gtt	ctc	ttc	ctg	tgc	ttg	aga	agc	atc	cgg	tgt	ttg	cgg	aat	gta	432
Phe	Val	Leu	Phe	Leu	Cys	Leu	Arg	Ser	Ile	Arg	Cys	Leu	Arg	Asn	Val	
	130					135					140					
att	cac	tgg	aat	tta	ata	acc	acc	ttc	atc	ctg	agg	aac	atc	atg	tgg	480
Ile	His	Trp	Asn	Leu	Ile	Thr	Thr	Phe	Ile	Leu	Arg	Asn	Ile	Met	Trp	
					150					155				160		
ctt	ctg	ctg	cag	ctc	atc	gac	cac	aac	atc	cat	gaa	agg	aac	gag	ccg	528
Leu	Leu	Leu	Gln	Leu	Ile	Asp	His	Asn	Ile	His	Glu	Arg	Asn	Glu	Pro	
				165					170					175		
tgg	tgc	cgc	ctc	ata	acc	acc	gtc	tat	aac	tat	ttt	gtg	gtg	acg	aat	576
Trp	Cys	Arg	Leu	Ile	Thr	Thr	Val	Tyr	Asn	Tyr	Phe	Val	Val	Thr	Asn	
			180					185					190			
ttt	ttc	tgg	atg	ttc	gtg	gag	ggc	tgt	tat	ctt	cac	aca	gcc	atc	gtt	624
Phe	Phe	Trp	Met	Phe	Val	Glu	Gly	Cys	Tyr	Leu	His	Thr	Ala	Ile	Val	
		195					200					205				
atg	acc	tac	tcc	acc	gac	aag	ctc	cgg	aag	tgg	gtc	ttc	ctc	ttc	atc	672
Met	Thr	Tyr	Ser	Thr	Asp	Lys	Leu	Arg	Lys	Trp	Val	Phe	Leu	Phe	Ile	
	210					215					220					
ggg	tgg	tgt	att	ccg	tgt	ccg	gtc	atc	att	gcg	tgg	gcc	gtc	ggg	aag	720
Gly	Trp	Cys	Ile	Pro	Cys	Pro	Val	Ile	Ile	Ala	Trp	Ala	Val	Gly	Lys	
					230					235				240		
ctg	tac	aac	gaa	aac	gaa	cag	tgc	tgg	ttt	gga	aaa	gaa	ccc	gga	aaa	768
Leu	Tyr	Asn	Glu	Asn	Glu	Gln	Cys	Trp	Phe	Gly	Lys	Glu	Pro	Gly	Lys	
				245					250					255		
tac	gtg	gac	tac	att	tat	cag	ggt	cct	gtg	att	gtt	gtt	ctg	ctg	ata	816
Tyr	Val	Asp	Tyr	Ile	Tyr	Gln	Gly	Pro	Val	Ile	Val	Val	Leu	Leu	Ile	
			260					265					270			
aac	ttc	gtg	ttc	ctg	ttc	aac	atc	gta	cgt	att	ctc	atg	acg	aag	ctg	864
Asn	Phe	Val	Phe	Leu	Phe	Asn	Ile	Val	Arg	Ile	Leu	Met	Thr	Lys	Leu	
		275					280					285				

cga gcc tcc acc acg tca gag acc ata cag tac agg aaa gcg gtg aag	912
Arg Ala Ser Thr Thr Ser Glu Thr Ile Gln Tyr Arg Lys Ala Val Lys	
290 295 300	
gcg acg tta gtg ctg ctt cct ctg ctc ggc atc aca tac atg ctg ttc	960
Ala Thr Leu Val Leu Leu Pro Leu Leu Gly Ile Thr Tyr Met Leu Phe	
305 310 315 320	
ttc gtg aat ccg ggg gat gat gac atc tca cag att gtc ttt att tat	1008
Phe Val Asn Pro Gly Asp Asp Asp Ile Ser Gln Ile Val Phe Ile Tyr	
325 330 335	
ttc aat tcc ttc ctg cag tcc ttt cag ggt ttc ttc gtc tca gtg ttt	1056
Phe Asn Ser Phe Leu Gln Ser Phe Gln Gly Phe Phe Val Ser Val Phe	
340 345 350	
tac tgc ttc ctc aac ggt gag gta cgg tca gca gta agg aaa cgt tgg	1104
Tyr Cys Phe Leu Asn Gly Glu Val Arg Ser Ala Val Arg Lys Arg Trp	
355 360 365	
cac aga tgg cag gat aac cac gct ctc cgt gtt cgg gtt gcc agg gcg	1152
His Arg Trp Gln Asp Asn His Ala Leu Arg Val Arg Val Ala Arg Ala	
370 375 380	
atg tcc atc cca aca tca cct act cgc atc agc ttc cac agc att aaa	1200
Met Ser Ile Pro Thr Ser Pro Thr Arg Ile Ser Phe His Ser Ile Lys	
385 390 395 400	
cac acc acc gct gtg tga	1218
His Thr Thr Ala Val	
405	

<210> 38  
 <211> 405  
 <212> PRT  
 <213> Ameiurus nebulosus

<400> 38

Met Glu Val Ser Leu Leu Glu Leu Leu Ser Val Glu Val Asn Cys Ser	
1 5 10 15	
Leu Ala Asp Ala Phe Gly Asp Pro Ala Tyr Gly Asn Ala Ser Asp Ala	
20 25 30	
Leu Tyr Cys Asn Ala Thr Ala Asp Glu Ile Gly Thr Cys Trp Pro Arg	
35 40 45	
Ser Gly Ala Gly Arg Val Val Ala Arg Pro Cys Pro Asp Phe Ile Asn	
50 55 60	
Gly Val Lys Tyr Asn Ser Thr Arg Ser Ala Tyr Arg Glu Cys Leu Glu	
65 70 75 80	

Asn Gly Thr Trp Ala Phe Lys Ile Asn Tyr Ser Ser Cys Glu Pro Ile  
 85 90 95

Leu Glu Glu Lys Arg Lys Tyr Pro Val His Tyr Lys Ile Ala Leu Ile  
 100 105 110

Ile Asn Tyr Leu Gly His Cys Ile Ser Val Gly Ala Leu Val Ile Ala  
 115 120 125

Phe Val Leu Phe Leu Cys Leu Arg Ser Ile Arg Cys Leu Arg Asn Val  
 130 135 140

Ile His Trp Asn Leu Ile Thr Thr Phe Ile Leu Arg Asn Ile Met Trp  
 145 150 155 160

Leu Leu Leu Gln Leu Ile Asp His Asn Ile His Glu Arg Asn Glu Pro  
 165 170 175

Trp Cys Arg Leu Ile Thr Thr Val Tyr Asn Tyr Phe Val Val Thr Asn  
 180 185 190

Phe Phe Trp Met Phe Val Glu Gly Cys Tyr Leu His Thr Ala Ile Val  
 195 200 205

Met Thr Tyr Ser Thr Asp Lys Leu Arg Lys Trp Val Phe Leu Phe Ile  
 210 215 220

Gly Trp Cys Ile Pro Cys Pro Val Ile Ile Ala Trp Ala Val Gly Lys  
 225 230 235 240

Leu Tyr Asn Glu Asn Glu Gln Cys Trp Phe Gly Lys Glu Pro Gly Lys  
 245 250 255

Tyr Val Asp Tyr Ile Tyr Gln Gly Pro Val Ile Val Val Leu Leu Ile  
 260 265 270

Asn Phe Val Phe Leu Phe Asn Ile Val Arg Ile Leu Met Thr Lys Leu  
 275 280 285

Arg Ala Ser Thr Thr Ser Glu Thr Ile Gln Tyr Arg Lys Ala Val Lys  
 290 295 300

Ala Thr Leu Val Leu Leu Pro Leu Leu Gly Ile Thr Tyr Met Leu Phe  
 305 310 315 320

Phe Val Asn Pro Gly Asp Asp Asp Ile Ser Gln Ile Val Phe Ile Tyr

	325		330		335
Phe Asn Ser	Phe Leu Gln Ser	Phe Gln Gly Phe Phe Val	Ser Val Phe		
	340	345	350		
Tyr Cys Phe	Leu Asn Gly Glu Val	Arg Ser Ala Val	Arg Lys Arg Trp		
	355	360	365		
His Arg Trp	Gln Asp Asn His	Ala Leu Arg Val	Arg Val Ala Arg Ala		
	370	375	380		
Met Ser Ile	Pro Thr Ser Pro	Thr Arg Ile Ser	Phe His Ser Ile Lys		
	385	390	395	400	
His Thr Thr	Ala Val				
	405				

<210> 39  
 <211> 1248  
 <212> DNA  
 <213> Bos taurus

<220>  
 <221> CDS  
 <222> (1)..(1248)

<400> 39	
atg gga cgg cgc ccg cag ctc cgg ctt gtc aag gcc ctt ctc ctc ctg	48
Met Gly Arg Arg Pro Gln Leu Arg Leu Val Lys Ala Leu Leu Leu	
1 5 10 15	
ggg ctg aac tcc atc tct gcc tcc ctc cag gac cag cat tgc gag agc	96
Gly Leu Asn Ser Ile Ser Ala Ser Leu Gln Asp Gln His Cys Glu Ser	
20 25 30	
ttg tcc gtg gcc agc aac gtc tct gga ctg cag tgc aat gct tcc gtg	144
Leu Ser Val Ala Ser Asn Val Ser Gly Leu Gln Cys Asn Ala Ser Val	
35 40 45	
gac ctt att ggt acc tgc tgg ccc cag agt cct gca ggg cag ttg gtg	192
Asp Leu Ile Gly Thr Cys Trp Pro Gln Ser Pro Ala Gly Gln Leu Val	
50 55 60	
gtt cga ccc tgc ctc gta ttt ttc tat ggt gtc cgc tac aat acc aca	240
Val Arg Pro Cys Leu Val Phe Phe Tyr Gly Val Arg Tyr Asn Thr Thr	
65 70 75 80	
aac aac ggc tac cgg gag tgc ctg gcc aat ggc acg tgg gcc gcc cgc	288
Asn Asn Gly Tyr Arg Glu Cys Leu Ala Asn Gly Thr Trp Ala Ala Arg	
85 90 95	
gtg aac tac tcc gag tgc caa gag atc ctc agc gag gag aag aag agc	336
Val Asn Tyr Ser Glu Cys Gln Glu Ile Leu Ser Glu Glu Lys Lys Ser	
100 105 110	

aag	gtg	cac	tac	cac	atc	gct	gtc	atc	atc	aac	tac	cta	ggc	cac	tgc	384
Lys	Val	His	Tyr	His	Ile	Ala	Val	Ile	Ile	Asn	Tyr	Leu	Gly	His	Cys	
		115					120					125				
atc	tcc	ctg	gcg	gcc	ctc	ctg	gtg	gcc	ttt	gtc	ctc	ttt	ctg	cgg	ctc	432
Ile	Ser	Leu	Ala	Ala	Leu	Leu	Val	Ala	Phe	Val	Leu	Phe	Leu	Arg	Leu	
	130					135					140					
agg	agc	atc	cgg	tgc	ctg	aga	aac	atc	atc	cac	tgg	aac	ctc	atc	tca	480
Arg	Ser	Ile	Arg	Cys	Leu	Arg	Asn	Ile	Ile	His	Trp	Asn	Leu	Ile	Ser	
145					150					155					160	
gcc	ttc	atc	ctg	cgc	aac	gcc	acg	tgg	ttc	gtg	gtc	cag	ctc	acc	atg	528
Ala	Phe	Ile	Leu	Arg	Asn	Ala	Thr	Trp	Phe	Val	Val	Gln	Leu	Thr	Met	
				165					170					175		
agc	ccc	gaa	gtc	cat	cag	agc	aac	gtg	ggc	tgg	tgc	agg	ctg	gtg	aca	576
Ser	Pro	Glu	Val	His	Gln	Ser	Asn	Val	Gly	Trp	Cys	Arg	Leu	Val	Thr	
			180					185					190			
gcc	gcc	tac	aac	tac	ttc	cac	gtg	acc	aac	ttc	ttc	tgg	atg	ttc	ggc	624
Ala	Ala	Tyr	Asn	Tyr	Phe	His	Val	Thr	Asn	Phe	Phe	Trp	Met	Phe	Gly	
		195					200					205				
gag	ggc	tgc	tac	ctg	cac	acg	gcc	atc	gtg	ctc	acg	tac	tcc	aca	gac	672
Glu	Gly	Cys	Tyr	Leu	His	Thr	Ala	Ile	Val	Leu	Thr	Tyr	Ser	Thr	Asp	
	210					215					220					
cgg	ctg	cga	aag	tgg	atg	ttt	atc	tgc	atc	ggc	tgg	ggc	gtg	cct	ttc	720
Arg	Leu	Arg	Lys	Trp	Met	Phe	Ile	Cys	Ile	Gly	Trp	Gly	Val	Pro	Phe	
225					230					235					240	
ccc	atc	att	gtg	gcc	tgg	gcc	att	ggg	aag	ctg	tac	tac	gac	aac	gag	768
Pro	Ile	Ile	Val	Ala	Trp	Ala	Ile	Gly	Lys	Leu	Tyr	Tyr	Asp	Asn	Glu	
				245					250					255		
aag	tgc	tgg	ttt	ggc	aaa	agg	cct	ggg	gtg	tac	act	gac	tac	atc	tac	816
Lys	Cys	Trp	Phe	Gly	Lys	Arg	Pro	Gly	Val	Tyr	Thr	Asp	Tyr	Ile	Tyr	
			260					265					270			
cag	ggc	ccg	atg	atc	ttg	gtc	ctg	ctg	atc	aac	ttc	atc	ttc	ctt	ttc	864
Gln	Gly	Pro	Met	Ile	Leu	Val	Leu	Leu	Ile	Asn	Phe	Ile	Phe	Leu	Phe	
		275					280					285				
aac	atc	gtc	cgc	atc	ctc	atg	acc	aaa	ctc	cgg	gca	tcc	acc	acc	tct	912
Asn	Ile	Val	Arg	Ile	Leu	Met	Thr	Lys	Leu	Arg	Ala	Ser	Thr	Thr	Ser	
		290				295					300					
gag	acc	att	cag	tac	agg	aag	gct	gtg	aag	gcc	act	ctg	gtg	ctg	ctc	960
Glu	Thr	Ile	Gln	Tyr	Arg	Lys	Ala	Val	Lys	Ala	Thr	Leu	Val	Leu	Leu	
305					310					315					320	
ccc	ctc	ctg	ggc	atc	acg	tac	atg	ctg	ttc	ttc	gtg	aac	cct	ggg	gag	1008
Pro	Leu	Leu	Gly	Ile	Thr	Tyr	Met	Leu	Phe	Phe	Val	Asn	Pro	Gly	Glu	
				325					330					335		
gac	gag	gtc	tcc	agg	gtc	gtc	ttc	atc	tac	ttc	aac	tcc	ttc	ctg	gaa	1056
Asp	Glu	Val	Ser	Arg	Val	Val	Phe	Ile	Tyr	Phe	Asn	Ser	Phe	Leu	Glu	
			340					345					350			
tct	ttc	cag	ggc	ttc	ttc	gtg	tct	gtg	ttc	tac	tgc	ttc	ctc	aac	agc	1104

Ser Phe Gln Gly Phe Phe Val Ser Val Phe Tyr Cys Phe Leu Asn Ser  
 355 360 365

gag gtc cgc tct gcc atc cgg aag agg tgg cac cgc tgg cag gac aag 1152  
 Glu Val Arg Ser Ala Ile Arg Lys Arg Trp His Arg Trp Gln Asp Lys  
 370 375 380

cac tca atc cgt gcc cgc gtg gct cgc gcc atg tcc atc ccc acc tcc 1200  
 His Ser Ile Arg Ala Arg Val Ala Arg Ala Met Ser Ile Pro Thr Ser  
 385 390 395 400

ccc acc cgt gtc agc ttt cac agc atc aag cag tcc aca gca gtg tga 1248  
 Pro Thr Arg Val Ser Phe His Ser Ile Lys Gln Ser Thr Ala Val  
 405 410 415

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 <212> PRT  
 <213> Bos taurus

<400> 40

Met Gly Arg Arg Pro Gln Leu Arg Leu Val Lys Ala Leu Leu Leu Leu  
 1 5 10 15

Gly Leu Asn Ser Ile Ser Ala Ser Leu Gln Asp Gln His Cys Glu Ser  
 20 25 30

Leu Ser Val Ala Ser Asn Val Ser Gly Leu Gln Cys Asn Ala Ser Val  
 35 40 45

Asp Leu Ile Gly Thr Cys Trp Pro Gln Ser Pro Ala Gly Gln Leu Val  
 50 55 60

Val Arg Pro Cys Leu Val Phe Phe Tyr Gly Val Arg Tyr Asn Thr Thr  
 65 70 75 80

Asn Asn Gly Tyr Arg Glu Cys Leu Ala Asn Gly Thr Trp Ala Ala Arg  
 85 90 95

Val Asn Tyr Ser Glu Cys Gln Glu Ile Leu Ser Glu Glu Lys Lys Ser  
 100 105 110

Lys Val His Tyr His Ile Ala Val Ile Ile Asn Tyr Leu Gly His Cys  
 115 120 125

Ile Ser Leu Ala Ala Leu Leu Val Ala Phe Val Leu Phe Leu Arg Leu  
 130 135 140

Arg Ser Ile Arg Cys Leu Arg Asn Ile Ile His Trp Asn Leu Ile Ser  
 145 150 155 160

Ala Phe Ile Leu Arg Asn Ala Thr Trp Phe Val Val Gln Leu Thr Met  
 165 170 175

Ser Pro Glu Val His Gln Ser Asn Val Gly Trp Cys Arg Leu Val Thr  
 180 185 190

Ala Ala Tyr Asn Tyr Phe His Val Thr Asn Phe Phe Trp Met Phe Gly  
 195 200 205

Glu Gly Cys Tyr Leu His Thr Ala Ile Val Leu Thr Tyr Ser Thr Asp  
 210 215 220

Arg Leu Arg Lys Trp Met Phe Ile Cys Ile Gly Trp Gly Val Pro Phe  
 225 230 235 240

Pro Ile Ile Val Ala Trp Ala Ile Gly Lys Leu Tyr Tyr Asp Asn Glu  
 245 250 255

Lys Cys Trp Phe Gly Lys Arg Pro Gly Val Tyr Thr Asp Tyr Ile Tyr  
 260 265 270

Gln Gly Pro Met Ile Leu Val Leu Leu Ile Asn Phe Ile Phe Leu Phe  
 275 280 285

Asn Ile Val Arg Ile Leu Met Thr Lys Leu Arg Ala Ser Thr Thr Ser  
 290 295 300

Glu Thr Ile Gln Tyr Arg Lys Ala Val Lys Ala Thr Leu Val Leu Leu  
 305 310 315 320

Pro Leu Leu Gly Ile Thr Tyr Met Leu Phe Phe Val Asn Pro Gly Glu  
 325 330 335

Asp Glu Val Ser Arg Val Val Phe Ile Tyr Phe Asn Ser Phe Leu Glu  
 340 345 350

Ser Phe Gln Gly Phe Phe Val Ser Val Phe Tyr Cys Phe Leu Asn Ser  
 355 360 365

Glu Val Arg Ser Ala Ile Arg Lys Arg Trp His Arg Trp Gln Asp Lys  
 370 375 380

His Ser Ile Arg Ala Arg Val Ala Arg Ala Met Ser Ile Pro Thr Ser  
 385 390 395 400

Pro Thr Arg Val Ser Phe His Ser Ile Lys Gln Ser Thr Ala Val  
405 410 415

<210> 41  
<211> 1422  
<212> DNA  
<213> Gallus gallus

<220>  
<221> CDS  
<222> (138)..(1400)

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tgcggaggga gctaagg atg gtg ccc ggc ccg cgt cct gcc ctc ctc ctc 170  
Met Val Pro Gly Pro Arg Pro Ala Leu Leu Leu  
1 5 10  
ctc ctc ttt ctc ctg cag gcg ttt ctc ctc tgg gat agt ccc gtt gca 218  
Leu Leu Phe Leu Leu Gln Ala Phe Leu Leu Trp Asp Ser Pro Val Ala  
15 20 25  
gcc tcc atc caa gag cag tac tgt gag agc ctg ctg ccc acc acc aac 266  
Ala Ser Ile Gln Glu Gln Tyr Cys Glu Ser Leu Leu Pro Thr Thr Asn  
30 35 40  
cac aca gga cct cag tgc aac gcc tcg gtg gac ctg att ggc acg tgc 314  
His Thr Gly Pro Gln Cys Asn Ala Ser Val Asp Leu Ile Gly Thr Cys  
45 50 55  
tgg ccc cgc agt gca gtg gga caa ctg gtg gct cgg ccc tgc ccc gag 362  
Trp Pro Arg Ser Ala Val Gly Gln Leu Val Ala Arg Pro Cys Pro Glu  
60 65 70 75  
tat ttc tac ggc gtg cgg tac aac acc aca aac aat ggc tac agg gaa 410  
Tyr Phe Tyr Gly Val Arg Tyr Asn Thr Thr Asn Asn Gly Tyr Arg Glu  
80 85 90  
tgc ctc gct aac ggg agc tgg gca gca cgg gtc aac tac tcc cag tgc 458  
Cys Leu Ala Asn Gly Ser Trp Ala Ala Arg Val Asn Tyr Ser Gln Cys  
95 100 105  
cag gag atc ctc agt gag gag aag agg agc aag ctg cac tac cac atc 506  
Gln Glu Ile Leu Ser Glu Glu Lys Arg Ser Lys Leu His Tyr His Ile  
110 115 120  
gct gtc atc atc aac tac ctg ggg cac tgc gtc tcg ctg ggg acc ctc 554  
Ala Val Ile Ile Asn Tyr Leu Gly His Cys Val Ser Leu Gly Thr Leu  
125 130 135  
ctt gtg gcc ttc gtc ctc ttc atg cgc ctg cgg agc atc cgg tgc ttg 602  
Leu Val Ala Phe Val Leu Phe Met Arg Leu Arg Ser Ile Arg Cys Leu  
140 145 150 155  
agg aac atc atc cac tgg aac ctg atc aca gcc ttc atc cta cgc aat 650  
Arg Asn Ile Ile His Trp Asn Leu Ile Thr Ala Phe Ile Leu Arg Asn

160								165					170					
gcc	acg	tgg	ttt	gtg	gtg	cag	ctc	acg	atg	aac	cca	gag	gtg	cac	gag	698		
Ala	Thr	Trp	Phe	Val	Val	Gln	Leu	Thr	Met	Asn	Pro	Glu	Val	His	Glu			
			175					180					185					
agc	aac	gtg	gtc	tgg	tgc	cgc	ttg	gtc	act	gct	gcc	tac	aat	tac	ttc	746		
Ser	Asn	Val	Val	Trp	Cys	Arg	Leu	Val	Thr	Ala	Ala	Tyr	Asn	Tyr	Phe			
		190					195					200						
cat	gtc	acc	aac	ttc	ttc	tgg	atg	ttt	ggc	gag	ggc	tgc	tac	ctg	cac	794		
His	Val	Thr	Asn	Phe	Phe	Trp	Met	Phe	Gly	Glu	Gly	Cys	Tyr	Leu	His			
	205					210					215							
aca	gcc	atc	gtc	ctc	acc	tat	tcc	acc	gac	aag	ctc	cgc	aag	tgg	atg	842		
Thr	Ala	Ile	Val	Leu	Thr	Tyr	Ser	Thr	Asp	Lys	Leu	Arg	Lys	Trp	Met			
220					225					230					235			
ttc	atc	tgc	att	ggc	tgg	tgt	atc	ccc	ttt	ccc	atc	att	gtc	gcc	tgg	890		
Phe	Ile	Cys	Ile	Gly	Trp	Cys	Ile	Pro	Phe	Pro	Ile	Ile	Val	Ala	Trp			
				240					245					250				
gcc	atc	ggg	aag	ctg	tac	tac	gac	aac	gag	aag	tgc	tgg	ttt	ggg	aag	938		
Ala	Ile	Gly	Lys	Leu	Tyr	Tyr	Asp	Asn	Glu	Lys	Cys	Trp	Phe	Gly	Lys			
			255					260					265					
cga	gca	gga	gtt	tat	act	gac	tac	atc	tat	caa	ggc	ccc	atg	atc	ctg	986		
Arg	Ala	Gly	Val	Tyr	Thr	Asp	Tyr	Ile	Tyr	Gln	Gly	Pro	Met	Ile	Leu			
		270					275					280						
gtg	ctt	ctg	atc	aac	ttc	atc	ttt	ctg	ttc	aac	att	gtt	cgg	att	ctc	1034		
Val	Leu	Leu	Ile	Asn	Phe	Ile	Phe	Leu	Phe	Asn	Ile	Val	Arg	Ile	Leu			
	285					290					295							
atg	acc	aag	ctc	cga	gca	tca	acc	acg	tca	gag	aca	atc	cag	tac	aga	1082		
Met	Thr	Lys	Leu	Arg	Ala	Ser	Thr	Thr	Ser	Glu	Thr	Ile	Gln	Tyr	Arg			
300					305					310					315			
aaa	gca	gtc	aag	gct	acg	ctg	gtg	ctg	ctg	tcc	ttg	ctg	gga	atc	acc	1130		
Lys	Ala	Val	Lys	Ala	Thr	Leu	Val	Leu	Leu	Ser	Leu	Leu	Gly	Ile	Thr			
				320				325						330				
tac	atg	ctg	ttc	ttt	gtc	aat	ccg	ggg	gag	gat	gag	atc	tcc	agg	atc	1178		
Tyr	Met	Leu	Phe	Phe	Val	Asn	Pro	Gly	Glu	Asp	Glu	Ile	Ser	Arg	Ile			
			335					340					345					
gtc	ttc	atc	tac	ttc	aac	tcc	ttc	ctg	gag	tcc	ttc	cag	ggc	ttc	ttt	1226		
Val	Phe	Ile	Tyr	Phe	Asn	Ser	Phe	Leu	Glu	Ser	Phe	Gln	Gly	Phe	Phe			
		350					355					360						
gtc	tct	gtc	ttc	tac	tgc	ttc	ctg	aac	agc	gag	gtg	cgt	tcg	gct	gtg	1274		
Val	Ser	Val	Phe	Tyr	Cys	Phe	Leu	Asn	Ser	Glu	Val	Arg	Ser	Ala	Val			
	365					370					375							
cgg	aag	cgg	tgg	cac	cga	tgg	cag	gac	aag	cac	tcc	atc	cgc	gct	cgg	1322		
Arg	Lys	Arg	Trp	His	Arg	Trp	Gln	Asp	Lys	His	Ser	Ile	Arg	Ala	Arg			
380					385					390					395			
gtg	gct	cgg	gcc	atg	tcc	atc	ccc	acc	tcc	cca	acc	cgg	gtc	agc	ttc	1370		
Val	Ala	Arg	Ala	Met	Ser	Ile	Pro	Thr	Ser	Pro	Thr	Arg	Val	Ser	Phe			
				400					405					410				

cac agc atc aag cag tcc tca gca gtg tga ggcaggagga ggcagctgcc ga 1422  
 His Ser Ile Lys Gln Ser Ser Ala Val  
 415 420

<210> 42  
 <211> 420  
 <212> PRT  
 <213> Gallus gallus

<400> 42

Met Val Pro Gly Pro Arg Pro Ala Leu Leu Leu Leu Leu Phe Leu Leu  
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Gln Ala Phe Leu Leu Trp Asp Ser Pro Val Ala Ala Ser Ile Gln Glu  
 20 25 30

Gln Tyr Cys Glu Ser Leu Leu Pro Thr Thr Asn His Thr Gly Pro Gln  
 35 40 45

Cys Asn Ala Ser Val Asp Leu Ile Gly Thr Cys Trp Pro Arg Ser Ala  
 50 55 60

Val Gly Gln Leu Val Ala Arg Pro Cys Pro Glu Tyr Phe Tyr Gly Val  
 65 70 75 80

Arg Tyr Asn Thr Thr Asn Asn Gly Tyr Arg Glu Cys Leu Ala Asn Gly  
 85 90 95

Ser Trp Ala Ala Arg Val Asn Tyr Ser Gln Cys Gln Glu Ile Leu Ser  
 100 105 110

Glu Glu Lys Arg Ser Lys Leu His Tyr His Ile Ala Val Ile Ile Asn  
 115 120 125

Tyr Leu Gly His Cys Val Ser Leu Gly Thr Leu Leu Val Ala Phe Val  
 130 135 140

Leu Phe Met Arg Leu Arg Ser Ile Arg Cys Leu Arg Asn Ile Ile His  
 145 150 155 160

Trp Asn Leu Ile Thr Ala Phe Ile Leu Arg Asn Ala Thr Trp Phe Val  
 165 170 175

Val Gln Leu Thr Met Asn Pro Glu Val His Glu Ser Asn Val Val Trp  
 180 185 190

Cys Arg Leu Val Thr Ala Ala Tyr Asn Tyr Phe His Val Thr Asn Phe  
 195 200 205

Phe Trp Met Phe Gly Glu Gly Cys Tyr Leu His Thr Ala Ile Val Leu  
 210 215 220

Thr Tyr Ser Thr Asp Lys Leu Arg Lys Trp Met Phe Ile Cys Ile Gly  
 225 230 235 240

Trp Cys Ile Pro Phe Pro Ile Ile Val Ala Trp Ala Ile Gly Lys Leu  
 245 250 255

Tyr Tyr Asp Asn Glu Lys Cys Trp Phe Gly Lys Arg Ala Gly Val Tyr  
 260 265 270

Thr Asp Tyr Ile Tyr Gln Gly Pro Met Ile Leu Val Leu Leu Ile Asn  
 275 280 285

Phe Ile Phe Leu Phe Asn Ile Val Arg Ile Leu Met Thr Lys Leu Arg  
 290 295 300

Ala Ser Thr Thr Ser Glu Thr Ile Gln Tyr Arg Lys Ala Val Lys Ala  
 305 310 315 320

Thr Leu Val Leu Leu Ser Leu Leu Gly Ile Thr Tyr Met Leu Phe Phe  
 325 330 335

Val Asn Pro Gly Glu Asp Glu Ile Ser Arg Ile Val Phe Ile Tyr Phe  
 340 345 350

Asn Ser Phe Leu Glu Ser Phe Gln Gly Phe Phe Val Ser Val Phe Tyr  
 355 360 365

Cys Phe Leu Asn Ser Glu Val Arg Ser Ala Val Arg Lys Arg Trp His  
 370 375 380

Arg Trp Gln Asp Lys His Ser Ile Arg Ala Arg Val Ala Arg Ala Met  
 385 390 395 400

Ser Ile Pro Thr Ser Pro Thr Arg Val Ser Phe His Ser Ile Lys Gln  
 405 410 415

Ser Ser Ala Val  
 420

<210> 43

<211> 38  
<212> PRT  
<213> Mus musculus

<400> 43

Val Ile Leu Ser Leu Asp Val Pro Ile Gly Leu Leu Arg Ile Leu Leu  
1 5 10 15

Glu Gln Ala Arg Tyr Lys Ala Ala Arg Asn Gln Ala Ala Thr Asn Ala  
20 25 30

Gln Ile Leu Ala His Val  
35

<210> 44  
<211> 38  
<212> PRT  
<213> Homo sapiens

<400> 44

Ile Val Leu Ser Leu Asp Val Pro Ile Gly Leu Leu Gln Ile Leu Leu  
1 5 10 15

Glu Gln Ala Arg Ala Arg Ala Ala Arg Glu Gln Ala Thr Thr Asn Ala  
20 25 30

Arg Ile Leu Ala Arg Val  
35